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☞ The *Mechanical Engineering* department of this paper will be under the charge of Mr. ZERAH COLBURN.

PRINCIPAL CONTENTS.

Gov. Bigler's Message to the Legislature upon the affairs at Erie....113
Public Works of Virignia....116
Finances of the several States....116
Washburn Patent Car Wheels....117
The Chilled Tire in Vermont....118
Gov. Matteson on Pennsylvania Policy....118
Railway Construction in the West....119
Stock and Money Market....120
Toledo and Indianapolis R. R....120
Fitchbugh Railroad....120
E. F. Johson's Report....121
Duties on Railroad Iron....121
Adaptation of Locomotives....122
Cost of Railroads....123
New York Central Railroad....124
Rutland and Washington R. R....124
Railroads of New York—Annual Report of the State Engineer....124
Receipts of R. R. Iron at Cleveland....126
Providence and Worcester R. R....127

American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO., No. 9 SPRUCE ST.

Saturday, February 25, 1854.

Governor Bigler's Doings at Erie, and his Report to the Legislature.

Governor Bigler has returned from Erie, whither he went to seize the Franklin Canal Company's road, and has made return of his doings to the Legislature. From the intimate connection of his message with the Erie affair, and for the purpose of presenting both sides of the controversy, which by the Governor's own showing, has but *one* side, we give *all* that portion of the message relative to the question at issue.

The Governor commences by giving an account of his seizure of the road and the arrangement entered into with the Ohio company for running it. He then goes on to say—

It affords me unaffected pleasure to inform you, that notwithstanding the violent controversy which had been maintained for months past, between the railroad companies and the people of Erie, and the high degree of excitement incident to such a contest, *I encountered but little difficulty in accomplishing the objects of the law.* No serious disposition was manifested at any time to resist the authority of the State.

Encountered but little difficulty! Why, the people of Erie were, of all others, the fiercest in their demands for the abrogation of the Franklin Canal Company's charter! Yet the Governor tells us that they offered but *little* opposition to the seizure of the road! As there was a *little*, there must have been *some* opposition.

This is the method that the governor uses to tell his constituents that he had quelled the *Erie* mobs. He had not the ingenuousness to speak the truth boldly, but talks all the time about the *Franklin*, when he wishes to be understood as refering to the North East company. Such double dealing and evasion are contemptible in the Governor of a great State. It would be downright misrepresentation did not every one see through the veil of gauze behind which the Governor tries to hide.

The paragraph in the message next to the extract already given is of the same sort.

Forbearance and prudence appeared to distinguish the conduct of the mass of people, as well as the action of all the parties directly concerned in the adjustment of this unpleasant affair. While, therefore, it is hoped *that the settlement of the difficulty in the manner just indicated may prove satisfactory, the restoration of peace and quiet to the community will doubtless be a subject of gratulation throughout the country*; as it certainly should be of special gratification to you and the other authorities of the State. With an unfaltering determination on the part of the people of Erie to maintain their rights before the Courts, and to insist upon measures of legislation for the promotion of their welfare, I feel assured that they are equally prepared to restrain, and if needs be to resist any act of violence to persons or property, or other acts in derogation of the law.

We invite attention to the italicised portion of the paragraph: "*The difficulties settled in the manner indicated, etc.*" The Franklin Canal company have been no party to the *difficulties* spoken of by Governor Bigler. *They* have been mere spectators. Their conduct has not even been complained of by the Erie rioters. Their road was attacked by them, to be sure, but only in a kind of a phrensy of madness, when they saw that they could not prevent the change of gauge on the North East road. The Franklin company have not only been in no way connected with the Erie "*difficulties*," but they have in reality committed no real offence whatever; for in the very next paragraph Governor Bigler reccomends that a suitable and competent charter be given for the road already built; a curious punishment for a grave offence. In our view, the above extracts place the candor and firmness of the Governor in no enviable light. All that part of the message quoted, is a direct attempt to mistake the real question at issue, and to convey the impression that it was the Franklin company that created all the difficulties referred to.

The next paragraph, for we are giving them consecutively, is as follows:

The claim of the State to the route from the city of Erie to the Ohio line having been thus maintained, the inquiry naturally arises, shall a grant for a road between these points be made, and on what conditions? I have no hesitation in expressing the opinion that the grant should be made, and as promptly as convenient, and thus put the controversy at rest. The State should certainly do this, or make provision for payment to the stockholders of the Franklin Canal company of a fair compensation for the railroad constructed by them, and keep it herself. *Of these propositions I am inclined to prefer the former.* Should the grant be made to a corporation, such conditions can be annexed as will meet the wishes of the people of Erie, promote their welfare, extend the business and usefulness of the harbor at that place, and advance the general prosperity of the State, without subjecting travel or commerce to more than an incidental or unavoidable inconvenience.

Among the conditions should be one requiring this road to connect with the harbor at Erie; and such other forms as the General Assembly may deem right and proper.

This is the punishment for the terrible offence committed! A good charter instead of a *worthless* one. The Franklin company ought to be everlastingly obliged to Governor Bigler for the *discipline* he recommends. Here is a company who, in his language, have committed high offences, one of which has been the invasion of the right of Eminent Domain. They are arraigned, tried, and convicted! What is the punishment recommended by this champion of an insulted sovereignty! Why that a *patent* be granted allowing the company repeat with impunity the offence for which they stand condemned. If the sublime

here does not melt into the ridiculous in a twinkling, then we are no judge in such matters.

Again—

With these remarks, under other circumstances, my duty might close. But the manifest misrepresentations which have characterized the discussion of this unpleasant controversy in certain sections of the country, have induced me to present a brief statement of the facts of the case, as a defence of the State and her representatives.

Still at the old work of misrepresenting. The Franklin Canal company have been party to no unpleasant controversy, and no unpleasant feeling. They have been quietly at work, serving the public in their own way. The Erie people have really nothing against them. They want the road with the Ohio gauge. They threatened to destroy the road, and did destroy some portions of it, but then they were impelled by a sort of blind fury, exasperated by the failure of their designs against the North East company. The Franklin company is in no manner implicated in the Erie difficulties. Yet Governor Bigler speaks of them as the sole authors of all the troubles that have happened, and that in taking possession of the road *he met with some opposition from the people of Erie.* If such palpable misstatements are not contemptible in a person occupying the position of Governor Bigler, we do not know what is. But let us hear some more of the message.

The commonwealth, says Governor Bigler, has had no controversy with the citizens or corporations of other States, *nor has she been inclined to interfere with their rights or interests, or to unnecessarily interrupt the travel or commerce of the country.* She has been dealing with a *refractory* creature of her own, which had most palpably "misused and abused" the privileges conferred upon it by law; a corporation that had attempted the usurpation of power, that had infringed the sovereignty of the State, and invaded her rights of eminent domain. *If in this contest she was brought into collision with citizens and corporations of other States, the difficulty was not of her own seeking.* The vindication of her honor and dignity was a duty which she could not neglect; and I have no hesitation in saying, without any reference to the difficulties at Erie, that it was right and politic on the part of the State to exercise the power which she had reserved over this corporation. The act, I doubt not, will exert a wholesome influence in future over the conduct of similar bodies. If neglected in a case so manifestly proper, it would be idle to insert reservations and conditions in similar corporations for the protection of the public, as it would also be useless to grant additional railroad charters. Under such a latitudinarian construction as claimed by the Franklin Canal company, those already in existence could occupy every feasible route in the State.

The refractory creature then, by the recommendation of Governor Bigler, is to be allowed by *law* to repeat its *abuses and misuses ad infinitum.* A most lenient Governor this! We insist that he is *too* kind. As this "*refractory*" subject has kept the whole State in a ferment for years past, at a direct cost, we have no doubt, of more than $100,000, and probably $200,000, in addition to the expenses of the Governor's journey to pronounce sentence against it, we suggest that it should pay the cost of execution if no more. If the whole parade and fuss which this "*creature*" has caused, is to come to such a pitiful conclusion, the swelling drama that was promised has turned out to be a most contemptible *farce.*

The Governor next goes on to enumerate the enormities committed by the aforesaid "*refractory*" subject:

"In 1844, this Corporation was created for the purpose of improving the French Creek Division of the Pennsylvania Canal, the State reserving the right to re-possess said canal, at any time thereafter, by repaying the Company the amount of money expended in its improvement, with 6 per cent. interest.

In April, 1849 the Company was authorized to construct a railroad on the banks of said canal, and to extend the same from the head of the canal north to Erie, and south to Pittsburgh; the Legislature expressly reserving the right to revoke the charter of the Company, should the privileges granted be at any time "misused or abused." The Company made no attempt to improve said canal, nor to construct the railroad from the termini of the canal to Pittsburgh or Erie. In 1850, however, they commenced the construction of a railroad from the Ohio State line to the City of Erie, parallel with the lake, and nearly at a right angle with the route assigned to them by the Legislature.

They were early admonished against this attempt. In 1851, the Pittsburgh and Erie Railroad Company instituted proceedings against the Franklin Canal Company, in the Supreme Court, on the ground that they had no right to construct a road on the location which they were attempting to occupy.

In the spring of 1852, the Attorney General made complaint against said company before the Supreme Court, in the name of the Commonwealth, and prayed for an injunction to restrain the construction and use of said railroad. The opinion of the Court in this case was delivered in January, 1853; and while the injunction prayed for was refused on the technical ground that the Commonwealth could not, under the law, give security for damages, the views of the Court literally annihilated the rights of the company to construct a road on the route which they were then occupying, and in this opinion the Circuit Court of the United States, at Pittsburgh, has fully concurred.

The Legislature of 1853 repealed the law requiring the Commonwealth to give security for damages, and thereby removed the only obstacle in the way of a final decree against the company, in the case then pending. But inasmuch as the railroad, in the mean time, had been completed, and the only effect of the decree would be to restrain the use of the road, it was deemed proper to await the meeting of the Legislature, the only power that could properly and permanently dispose of this controversy.

The Legislature did act, and by virtue of the reservations contained in the charter already referred to, revoked and annulled all the rights and privileges granted to said company. This railroad with all its appurtantences, is therefore, in the possession of the State, and its operations under the direction of an officer of her own selection.

This brief history will be sufficient it is hoped to vindicate the commonwealth against the charge of having misled this company, by indulgence in their manifest inclination to assume rights not granted by law. Those familiar with the subject, I am confident, will agree with me in opinion that the attempt on their part to usurp the right has delayed an express grant. The company were admonished at every step that they were transcending their legitimate province; but the only effect seemed to be to stimulate them to greater indignity to the State, and increased fatality in the consummation of their own destruction.

The above, which is the bill of indictment, trial and conviction of the *refractor*, does not call for particular comment.

We have now given the narrative, or *historical* portions of the Governor's message. We come now to the *apologetic* or vindicatiory part of it.

"It has been frequently alleged that the State in her controversy with this corporation was actuated by a selfish motive, that she desired to interrupt the transit of persons and tonnage over that part of her territory.

The answer to this allegation is that her authorities could long since have had a final decree against the company and restrained the use of the road; and it will also be perceived that as soon as she did get control of it arrangements entirely agreeable to the public were made for its use.—She was also willing to remain quiet until the Legislature assembled and disposed of the whole controversy; but it seems that her indulgence has not been properly appreciated. Prudence and a just respect for the State should have dictated to the railroad companies the adoption of a similar liberal policy.

True, it may be said that the repeal of the gauge law gave the companies owning the roads east of Erie the right to change their gauge; but it is equally true that the opinion of the Supreme Court, delivered in 1852, was notice to them that the State had not granted the right to make a road of any gauge from the Erie to the Ohio line, and this fact was not overlooked in considering the repeal of the gauge law. *Was it prudent then, on their part, to change the width of their road to suit that of one constructed in known violation of law?* Was it not, to say the least of it, presumptuous to conclude that the State would confirm this fraud upon her rights? Would it not have been the part of wisdom to have rested quietly until the State had legalized a route from Erie west? I know that the affirmative of this is held by gentlemen connected in interest with the railroads. To this unfortunate movement, more than to any other, may be attributed a degree of excitement and resistance on the part of the people of Erie County, for which the State has been so much censured."

We invite *particular* attention to the preceding paragraph in which Governor Bigler both accounts and apologises, for the Erie riots, and if it does not stamp him with disgrace no act can. What is the apology offered for the long continued outrages committed against the North East Company. Not that they were doing an unlawful act, but in pursuance of law, and of a law to the enactment of which Gov. Bigler was himself a party, a law, the express object of which as he well knew, was to allow the North East Company to change their gauge to correspond to that of the Franklin Canal Company, they were about to make such a change! Such is the apology offered by the Governor of the great State of Pennsylvania for a series of outrages upon law, upon property, upon private right, upon commerce, and we may say upon humanity itself, of which the history of this country furnishes no example. What must we think of the moral or intellectual structure of the man who gravely presents himself before the world with such an apology for such acts! Again:—

"The citizens of Erie and the present Executive have been condemned for alleging that there should be a break of gauge at Erie; and I must beg your indulgence on this point for a moment.

A demand for an unnecessary break of railroad guage, and the consequent transhipment of tonnage and passengers, it will be conceded, would be an illiberal exaction, and an improper interruption of the commerce of the country. *But such is not the position of the question at Erie.* The necessity for a break of gauge between the West and the Atlantic cities results from the policy of New York and Ohio, and not from that of our own State. The railroads of Ohio are uniformly four feet ten inches wide, and those of New York, four feet eight and a-half inches, except one, which is six feet in width. A transhipment is therefore inevitable. It must occur, and the only question is as to the proper point. After all the reflection I have given the subject, I must again repeat what I said in my annual message, that I can see no reason founded in public policy, why the break should occur at Buffalo, that do not apply with equal force to Erie. The impediment to trade and travel will be alike at either point, with the advantage of greater unoccupied space at the latter. Nor have I been able

to discover why it is, that if a break of gauge is so entirely unimportant, there should be so much solicitude to have it at the City of Buffalo, or to understand how this city has escaped the execrations so freely heaped upon the City of Erie. If a transhipment at Erie be so prejudicial to the commercial interests of New York, why is not a break at Buffalo equally so? There is now a break of gauge at each, and is it not strange that, while the latter city has complained of Erie, it has failed to discover a similar obstruction to trade and travel in its own vicinity? When this shall have been removed, it will be time enough, it seems to me, to complain of Pennsylvania.

Governor Bigler mistates the position taken by the Erie people in reference to a break at that point. *Their* benefit is the exact measure of the public inconvenience. He also misconceives, and consequently mistakes, the grounds for carrying the Ohio gauge into New York. The advantages to be secured by a break of gauge at Buffalo and Dunkirk, had nothing whatever to do with the subject. The facts of the case are simply these: The prospective completion of the Erie road to Lake Erie, naturally directed attention to its extension *West*, so as to form a connection with the railroads of Ohio. For this purpose a road, with a contemplated six feet gauge, same as the Erie was commenced, extending from Dunkirk to the Pennsylvania State line. Parties in interest in the *Central* line, commenced about the same time the construction of a *narrow* gauge road from Buffalo, *West*, to correspond with the Central. The folly of building *two* roads, when *one* would answer all the purposes of the two, soon became apparent to all the parties concerned, and the result was, a consolidation of the *two* companies into *one*, called the Buffalo and State Line Railroad.

The consolidated line of necessity adopted the *Ohio* gauge, which was the only way by which the construction of *two* roads could be avoided. Had the Erie and North East Co. adopted the Ohio gauge, the arrangements of the Erie and Central lines of New York would have been the very best that could have been made. But that road was then in the hands of the Erie people, and they insisted upon the six feet gauge for the purpose of securing a break at their city. *Four* breaks were thus made necessary instead of *two*; and this was the reason for our saying that a better arrangement would have been, to have carried *one* of the New York gauges to Erie. The State took part with the Erie people and enacted a law prohibiting the Ohio gauge East of Erie. But the Buffalo and State line road having obtained a controlling influence in the North-East Company, procured a *repeal* of the Gauge Law and proceeded to change the gauge of the road, which resulted as we have seen. Neither Buffalo, nor Dunkirk, ever raised the question of gauge except in its bearing upon the convenience of commerce and travel. If breaks of gauges are to be remidied as far as possible, and if it be better to have but *one* road instead of two, where one is all that is needed for the accommodation of business, then the extension of the Ohio gauge through Pennsylvania into New York is the best arrangement that can be made. The people of Erie object to this arrangement for reasons so often stated. Their opposition has been in violation of law, of public convenience, was winked at, if not directly encouraged, and is now publicly apologized for, by Governor Bigler.

Again.

To illustrate this idea still more forcibly, suppose it were possibls to force that narrow strip of territory eastward for a few miles, and permit New York and Ohio to come together at Erie, then where would be the break of railroad gauge, and who would be at fault? When the capitalists of New York commenced the construction of a railroad from the City of Buffalo westward, differine in width from the other roads of that State, they had determined to impose upon commerce the inconvenience incident to a transhipment. Solicitous as I am to facilitate intercourse between the Great West and the Atlantic Cities and to maintain a liberal policy toward neighboring States, *I have been unable to discover a reason, in public policy, why this unavoidable transhipment should not occur at Erie.* Such a position is not wanting in courtesy or kindness to our neighbors. New York has selected her policy as to the width of railroads. She desires to extend them westward, and Pennsylvania is willing to admit them within her limits. Ohio, on the other hand, desires to get eastward, and Pennsylvania extends to her an equal degree of courtesy. *The latter State asks no advantage—she is willing to extend her roads to Erie, and meet New York and Ohio on equal terms, on her own terrritory.* Surely there can be no want of courtesy in this position. However much she may regret the necessity for a transhipment, she has not the power to obviate it. But, on the other hand, it is demanded that a gauge of railroad, unusual to Pennsylvania and New York both, with which neither can connect, should extend from Ohio to the City of Buffalo, on a line a mile and more south of the harbor, at Erie, and cutting off the chances of connection with the Sunbury and Erie, in the former State, and the New York and Erie Railroad, in the latter. This arrangement may answer the owners of the road better than the public. It has been assigned as a reason for this policy, that Buffalo is a greater city than Erie, and that the former should be regarded as the eastern termini of the western business. Atlantic cities will scarcely be willing to adopt this idea.

We have stated the reasons why it is more convenient for property to break bulk at Buffalo and Dunkirk than at *Erie*. All the talk that Pennsylvania was willing to allow the Ohio and New York gauges to come to Erie is sufficiently answered by the fact, that Pennsylvania allowed the North East road to select just such gauge as it chose. In face of the fact what righthas Gov. Bigler to assume the Bully, and to say what Pennsylvania will or will not do. He is but a citizen, as far as existing laws are concerned; and by adopting his present language he makes himself a co-worker with the Erie rioters. *He* has approved of a law allowing the North East Company to change the gauge and now says, Pennsylvania will not allow the Ohio gauge East of Erie! Here is rank sedition in the Governor himself: an assertion of the rights of a mob over law; a law too which bears his own signature! What a spectacle of consistency and political morality.

We now come to the Governor's reasons for compelling the roads at Erie to go to the harbor.

I, however, regard the connection of this Lake Shore Road, and the Sunbury and Erie, and the Pittsburgh and Erie Railroad with the Lake, at the harbor of Erie as vastly more important to the State and the City of Erie than the termini of the gauges. The harbor of Erie is one of the safest on the lake, and its other natural advantages are not surpassed. It can be connected with the Atlantic cities by a shorter and better railroad communication than any other, and it needs but this to place it in possession of an immense business. *But it will be vain to anticipate the accumulation of the vast products of the country in that harbor, unless facilities be afforded to transportation to and from it.* Nor is it any more reasonable to present the condition of business in the harbor, at this time, as an argument against the construction of such facilities. It would be as sensible to expect to discover full grown corn in the uncultivated forest, as to find the vast products of the country in a harbor from which there is no means of transit. *The natural advantages of this harbor have been thus far rudely rejected*; but this policy, I am confident, cannot be longer maintained. The increasing business of the country will demand the use of this eligible spot as a necessity; as I am also confident the connection of the lakes with Philadelphia by railroad will distinguish an era of renewed growth and greater prosperity to the city of Erie and the surrounding country.

Erie harbor has been rudely rejected! Not by the people of New York nor Ohio, but by Pennsylvania!; and why? We should like to have Governor Bigler tell us. What is the grand motive that impells to all exertion? *Money.* In making money, the instinct of the individual is a much greater safeguard, than the sagacity of legislators. If any money could have been made out of the use of the harbor at Erie, would not some shrewed Yankee have found it out, think you? If not, then this is the only exception to an universal rule. The latent advantages claimed for that port do not really exist. Who wants to go to Erie? Nobody. Consequently there has been nobody to build up a great city there. It has no back country, like Cleveland and Buffalo to supply a large domestic trade. It can never be the outlet for *western* produce. It will never see the day when produce can be forwarded, from its port, to tide water, for *one-half* the cost of sending the same from the same port, by way of Buffalo and the Erie canal. The canal is navigable for the same time that the Lake is. A dozen railroads from Erie to tide water would not help the case. Produce from the West would not stop there. A vessel from Chicago, say, will load to Buffalo cheaper than to any port on Lake Erie. Why? Because it is the only place at which a return freight can be had, if we except the article of coal, in which particular Buffalo will be soon as well off as Erie. The Erie bladder may as well be pricked now as to be allowed to burst of its own extreme windiness. Dunkirk was to be another great Lake city. What is it? An abortion; as is admitted in all hands. Had Erie any greater vitality, *somebody* would have found it out before this time of day. Yet Governor Bigler wonders why it is not a great city, He is going to make it so by *legislation*; by *malice prepense*. All merchandize passing through it must be changed from car to car. The roads must run to the harbor. Has he not sufficient sense and experience to know that the North East, and Franklin companies would have extended their roads to the harbor, had there been any prospect that the operation would have paid. There is no inducement for this. Does Governor Bigler want any better evidence of this fact, than that it has not beed done. What were these roads built for? To make money. The objects were purely *selfish*. Selfishness would have prompted their extension to the Lake, could selfishness have been rewarded by so doing. Is not selfishness a safer guide in such matters than the mere opinion of persons living at a distance, and who know nothing about the matter. Upon this branch of the subject the reasoning of the Governor is a shallow and unsound, (we can't find any softer terms), as upon the others. We are willing that he and the Erie people should have all they advantage they

can derive from it. Neither his nor their opinions can change the direction of trade, nor force it into inconvenient channels. If Erie is nothing *without* legislation, it must always remain a cypher. All attempts to force commerce there will be as futile, as it would be to attempt to make the great Lakes discharge their waters through that port. Governor Bigler therefore has an impossible task before him, to say nothing of the injustice of his positions toward the commerce of the country.

We now come to the concluding paragraph of the Governor's Message:

"I have approached the discussion of this subject with much reluctance, because of the unpleasant feelings which it has excited in certain sections of the country. I have only been constrained to do so by a sense of duty to the State in her sovereign capacity. *With the controversy which has been so vigorously maintained for a year or more at Erie*—with the crimination and recrimination between the railroad corporations and the citizens, between conflicting interests at Cleveland, Erie and Buffalo, and the peculiar policy that each may have used to accomplish the end in view, *I have not felt required to interefere*, nor to correct the various misrepresentations of my official acts in reference to the late difficulties at Erie. I have felt most concerned for the State and her character. For Pennsylvania, the birth place of the Declaration of Independence—the prolific mother of brave hearts and stout arms, ever ready to defend the country against foreign aggression—the bulwark of our national strength in domestic conflicts—the Keystone of the federal arch, and the unfaltering defender of the constitution, she will ask only what is right, and submit to nothing that is wrong. While she will never yield her rights to the usurpation of creatures of her own, or suffer the invasion of her sovereignty by those of another State, she will never make an unjust or unreasonable demand upon others. Claiming her rights and seeking to promote her own welfare by every proper means, she will nevertheless rejoice at the prosperity of neighboring States, and advance their interests by every just means in her power." WILLIAM BIGLER.

EXECUTIVE CHAMBER, *Harrisburg*, Feb 11, 1854.

We think this last paragraph caps the climax of the Governor's folly and nonsense. Why did he not *interfere* in the controversy which has been going on at Erie for more than a year? Why did he, as Chief Magistrate of the State, for weeks and months, tolerate a lawless mob in their destruction of property? Why did he not *interfere* to check them, and not leave it for the United States to do? It was not till he was shamed into action, by the indignant voice of the whole country, that he moved at all. We do not wonder at his sense of his own humiliation, which is most palpable, notwithstanding the gasconade and flourish about the *Key-Stone* State, with which he winds up. We have given the *whole* of the famous message immediately bearing upon the Erie troubles.

We had two motives: to give the Pennsylvania side of the case, and to show how utterly unsupported it is either by fact or argument. We desire no stronger evidence of the correctness of the ground we have taken in this affair. Of all the follies committed this message is the greatest. It leaves Gov. Bigler without apology, or sympathy for the wrongs he has permitted, or for the extraordinary doctrine he has proclaimed.

With this article we hope that we have at last got through with "affairs at Erie." We believe that they are in a fair way of settlement. That the Railroad Companies will substantially triumph we have not a doubt. They have now an *uniform* gauge. They run together. Nothing can long delay their ultimate connection!

Public Works of Virginia.

The Board of Public Works, to which is committed the management of the interests of the State of Virginia in her great system of improvements, has recently issued its annual report. Although it does not exhibit so great a progress in these works as could have been hoped, it explains the difficulties which have been presented and appeals to a feeling which Virginians will not disown, for means to complete the connection, so long demanded, of those portions of the great central State separated by the Alleghanies, and of the whole with the Great West.

The report notices the progress and condition of the Blue Ridge Railroad, which is to form, when completed, a most important connection of the system of the State. The road is 17 miles long, has four tunnels, respectively 538, 830, 100, and 4,248 feet in length. All of these have proved difficult of construction. Ten miles of the Eastern end of the road are completed, and in the present month three miles on the Western end are to be opened. The short tunnels are expected to be completed within the present year, and in two, or at the most two-and-a-half years, the main tunnel will be completed also. In the mean time the Virginia Central company will operate their road over the temporary track lately planned and executed by the Engineer, Chas. Ellet, Jr., a description of which was lately published in the Journal.

The James River and Kanawha Canal is in progress from Buchanan to within thirty miles of Covington, in Alleghany county, at which latter point it has been decided it shall have its Western terminus. The stockholders of this work have conferred on the propriety of its sale to the State, or the conversion of its debt into stock upon terms subject to mutual agreement by the parties.

The report alludes in proper terms to the objects to be gained by extending the great East and West lines of the State to the four important points on the Ohio River, Wheeling, Parkersburg, Point Pleasant, and the mouth of the Big Sandy, at all of which they will be met by great lines in Ohio or Kentucky.

Other lines of road than those in which the State is a stockholder, are alluded to and represented as in a flourishing condition.

The report shows the entire length of railroads within the State, as 2,102, of which 1,049 are completed, (including 240 miles of the Baltimore and Ohio road,) and 873 miles are in progess. The authorized capital of all the roads, other than the Baltimore and Ohio, is $27,096,100, of which the State holds on her own account $6,102,497 17.

The Board has nearly effected negotiations in London for a large amount of State securities issued in aid of the public works.

A large and accurate map of the State, including its geological topography, is in progress under the direction of the board.

The general works of improvement are well spoken of, and confident anticipations expressed of the future position of the State, upon the completion of her leading exterprises, by which her agricultural and mineral resources, and commercial facilities will become available.

The Commissioners of the Board of Public Works, are Archibald Graham, President; Edward J. Armstrong and Thomas J. Boyd, William R. Drinkon, Secretaries. Their office is in the State Capitol at Richmond.

State Finances.

We are now enabled to present fuller statements of the finances of Louisiana and Wisconsin, than those given in previous numbers of the *Journal*.

LOUISIANA.

The receipts into the Treasury during the past year, from all sources, have been	$2,148,487 75
The balance in the Treasury, Jan. 1, 1853, was	355,704 84
Total means within the year	$2,504,172 49
The payments during the year were,	1,340,443 80
Leaving a balance in the Treasury, Jan. 1	$1,164,568 08

The late Legislature borrowed $100,000 to pay current expenses, the treasury being then empty. It also ordered an issue of $750,000 of bonds to replenish the Treasury—making $850,000. This shows where the excess over last year comes from. $155,259 27, the State's final share of the surplus profits of the Union Bank, have also been received, besides some $20,000 from temporary sources.

Total taxes assessed in New Orleans,	$248,474 46
Taxes paid by the remainder of the State	464,227 79

The aggregate State liabilities sum up thus:

Liabilities for the property banks	$8,421,888
For the second Municipality of New Orleans	198,244
	$8,620,132

For these amounts the State has good security.

The State debt proper is—

Trust funds due on demand		$1,221,809 41
Bonds due 1855	$50,000	
" 1857	250,000	
" 1867	483,000	
" 1869	30,000	
" 1870	90,000	
" 1872	125,000	
" 1893	1,046,000	
Bond debt		3,074,000 00
Total State Debt proper		$4,295,809 41

The reduction of $804,000 of Union Bank bonds, during the year, was only nominal, the bank having paid the money. The withdrawal by the second and third Municipalities of $188,160 of State bonds issued to them, and the payment of $200,000 borrowed, to the Louisiana State Bank. Total reduction, $1,192,160. It has been increased by the loan of $750,000, by bonds issued for trust funds, for $284,559 91; and by bonds to the railroad companies, $302,000. Total addition $1,336,559 91. Increase of the debt for the year, $144,399 91.

WISCONSIN.

The receipts into the treasury during the year amounted to $311,682 61. The disbursements during the same period amounted to $262,489 20. The balance in the treasury, Jan. 1, 1854, was $57,136 48. The estimate of the probable amount to be drawn from the treasury during the present year, for the general expenses of the State, is stated at $147,210 70. The means applicable to meet the same are estimated at $160,017 74. The

school fund, on the 1st of January, 1854, amounted to $1,141,804 28, arising almost exclusively from the sale of lands granted by Congress. The whole amount expended in the erection of school-houses within the State has been $288,346 89, of which sum $45,071 84 were expended during the past year. The total amount expended in 1853 for the support of common schools was $175,784 17. The State University fund, on the 1st of January, 1854, amounted to $106,112 07. The number of banks in the State is 10; the amount of circulating notes issued by the controller, $519,000; and the amount of securities deposited with the State treasurer, $529,000.

MAINE.

The "*State of Maine*" gives the following abstract of the report of the State Treasurer, for the year ending Dec. 31, 1853.

"The amount of cash on hand on the first of January, 1853, was $165,448 23. The receipts during the year were $361,417 57—making a total of available means of $526,865 80. The disbursements were $434,361 09—leaving a balance, Dec. 31, 1853, of $92,504 71. This is subject to reduction, however, to meet past appropriations of $62,377 59=leaving a balance of $30,127 12 in the treasury, to be applied to future accruing expenditures.

Among the extraordinary items of expenditure for the past year, were the following: Payment on the Massachusetts lands $112,500; on account of repairs of Insan e Hospital $24,000; for construction, etc., of Reform School buildings $18,000—making a total of $154,500. The payments on the public debt have been $10,000, and for interest on debt, $42,474 21. Leaving for ordinary expenses of government, including payments from School Funds, etc., $289,787 47.

The payment of $112,500 on the Massachusetts lands was made by the Treasurer, immediately upon the approval of the deed by the Commissioners on the part of Maine; and ten bonds of $25,000 each were given for the balance, payable, one in each of the years, 1863, 1864, 1865, 1866, 1867, 1868, 1869, 1870, 1871, and 1872—at 5 per cent. interest.

The treasurer estimates the receipts for 1854, (including the cash on hand,) at $452,290 68; and the expenditures at $318,267 02. Of the receipts $207,000 is estimated from taxes, and $100,000 from the Land Office. And of the expenditures accruing, $21,000 is on the public debt, $30,500 for interest, and $12,000 on account of the Reform School—leaving $245,767 02 for ordinary expenditures.

The remaining funded debt of the State, (aside from the land debt,) is stated as follows: Due Jan. 1, 1853, and not called for, $11,000; due March 4, 1854, $10,000: due Feb. 1, 1855, $1,000; due March 7, 1855, $259,000; due March 7, 1856, $132,500; due Feb. 1, 1860, $48,000. Making a total of $461,500.

Of this amount, the large sum of $391,500 is to be provided for early in 1855, and 1856.

The annual State tax of $400,000 being all engrossed by the ordinary expenditures of government, and the sales of public lands having been stopped for the present year, the Treasurer says the resources for the payment of the public debt falling due in 1855-6, are reduced to the following:

Assets in the Land Office due or maturing before 1856	$321,000
So much of cash on hand as can be spared	30,000
100 shares in Augusta Bank	8,000
Notes due at the Treasurer's office prior to March 7, 1856	2,000
	$361,000

The receipts from the Land office in 1853, were $85,430 27.

KENTUCKY.

Besides the particulars of the State debt, and the operations in the State Treasury, given in a previous number of the Journal, we now present the following additional particulars of the wealth and growth of the State, from the recently published report of the State Auditor:

Number of acres of land taxed in 1853	20,667,443
Value	$166,857,626
Average value per acre	$8 07
Number of slaves	199,949
Value	$79,462,188
Total value of property paying ordinary taxes	$366,752,352
Total value of property paying special taxes	3,124,140
Taxes assessed at ordinary rates	623,479
" " special rates	9,372
Increase in value of property over value in 1852	$33,620,840
Whole revenue for year 1853	646,024

Air Vessels of Locomotive Pumps.

With a view of testing the value of air vessels, as applied to the force pumps of locomotives, Mr. G. B. Simonds, master mechanic of the New York and New Haven Railroad, applied air vessels of thick glass to some of his pumps. The idea had been entertained that the air chamber was of but little use at high speeds, as it was argued, it would soon become filled with water. The results of Mr. Simonds' trials proved this opinion to be incorrect, and showed the advantage of air vessels in a strong light, as means for relieving the strain on the feed pipes, and easing the motion of the pump valves. The air chambers tried were of glass, from ⅝ to ¾ inch thick, with a ground joint and confined in the usual manner by a clamp and set screw. The unequal expansion of the glass and iron clamp broke the former after a few trials; the explosions being loud and of such force as to send the pieces of glass to the farthest end of the engine house, within which the engine was standing at each time.

The results shown by these trials were as follows: The air chambers of about 7 inches height, and of an average diameter of about 2½, applied to pumps of 20 inches stroke, were filled at slow speeds to within 1½ or 2 inches of the tow, the surface of the water pulsating slightly with each stroke of the plunger. As the engine was run at successively higher speeds, the level of the water, contrary to the previous general opinion, fell, until at a speed of 35 miles per hour, (with 5½ feet wheel,) its general surface was about 5 inches below the top of the chamber. At every stroke of the plunger, however, a column of water, about 4 inches high rose and fell within the centre of the air vessel. This column was perhaps 1¼ inches diameter, and was of nearly the same outline as the interior surface of the air chamber.

The increase of the amount of air in the chamber, with increase of speed, is not the easiest of explanation. It may be supposed, generally to be the relief afforded by an uninterrupted current of water, in place of the intermittant jets of a slower progress. If the check valve falls fully upon its seat at every stroke, the pressure below it must exceed the pressure within the boiler in proportion to the difference between the internal and external area of the valve seat; by which a greater pressure is required to raise the valve than to keep it up afterwards. At high speeds the valve does not, probably, close upon its seat, and it may be supposed, that, with the air chamber, there is an uniform flow of water into the boiler, the impulse of each jet being absorbed in compressed air.

The relief which air chambers afford to the feed pipes, through which are carried columns of water subject to continual interruptions of motion, is quite plainly seen. Practice confirms the opinion also, inasmuch as the pipes give much more trouble in breaking off, when without these protections. The effects of air chambers on the suction sides of the pumps are beneficial also in proportion to the disturbance caused by interruptions in the flow of water.

Before the adoption of air chambers, it was thought that a full stroke pump would not work well at high speeds, and short stroke pumps were accordingly applied. When air chambers were introduced, the full-stroke pump, (stroke of plunger equal to stroke of piston) was restored to general use. At the present time no maker in the United States employs a short stroke pump. In England, where air vessels have seldom, if ever, been used, most of the passenger engines have short stroke pumps. The rise of the pump valves, of all engines, is now made much less than formerly. When the rise of valves was once ⅝th inch, it is now ¼th inch.—*American Railway Times.*

Washburn Patent Car Wheels.

Below will be found some valuable testimonials, addressed to the Agent of the Company, in favor of the "WASHBURN PATENT CAR WHEEL", manufactured and for sale by Washburn, Pond & Co., Troy, N. Y.

BOSTON & PROVIDENCE RAILROAD.

Boston, 20th May, 1853.

Dear Sir—Yours of the 18th is in hand. The Cast Iron Wheels in use on this (Boston & Providence) road are exclusively of the Washburn pattern, so called. We regard them as having great merit, both on account of pattern and stock.

The best wheel is the cheapest, which answers your last inquiry; and as we class the cast iron wheel made by Converse & Washburn, the best, they are the cheapest. Very respectfully,

W. RAYMOND LEE, Superintendent.

BOSTON & WORCESTER RAILROYD.

Boston, May 17, 1853.

Dear Sir—We have used all kinds of Cast Iron Wheels, double and single plate, spoke, etc., etc., none of which have proved so well as those manufactured by Converse & Washburn. Out of over three thousand (3000) used within three and one-half years, not one has broken by fair means.

Very respectfully, yours,

G. TWITCHELL, Superintendent.

WESTERN RAILROAD.

Springfield, Mass, May 17, 1853.

Dear Sir—Your favor of the 13th is at hand, and remarks in reference to Converse and Washburn Wheels noticed. In reply would say, that we have used upwards of two thousand (2000) of Converse & Washburn wheels, and must say that they have proved themselves a good wheel. So far as I know, they are spoken of by other Roads as being a first rate wheel. Yours, respectfully,

HENRY GRAY, Superintendant.

HARTFORD AND NEW-HAVEN RAILROAD.

Hartford, Conn., May 26, 1853.

Dear Sir—I have been requested by C. F. Pond, Esq., to whom your letter of the 17th was addressed, to reply to your inquiries respecting the use of Converse & Washburn's car wheels on this Road. It gives me much pleasure to say that we have used these wheels with much satisfaction for the last two years, and consider them superior to any others we have tried. Very respectfully, yours

M. L. SIKES, Jr. Superintendant.

OFFICE NEW LONDON, WILLIMANTIC AND PALMER RAILROAD.

New London, Conn., May 24, 1853.

Dear Sir—Yours of the 19th came to hand during my absence. We are using the Car Wheels patented by Mr. Washburn, and manufactured by Converse & Washburn, of Worcester, Mass. Our experience has shown them to be superior to others in strength and durability. They seem to be manufactured from better stock, with more care, and a better chill on the face.

Yours, very respectfully,

W. R. STORRS, Superintend't.

BOSTON AND LOWELL RAILROAD.

Boston, June 1, 1853.

Dear Sir—Your favor of the 19th inst. to Mr. Higginson has remained unanswered on account of his severe illness.

In reply to yours I can say that there is no wheel now in use of better repute than that of Converse & Washburn. We consider here that the stock is of more importance than the pattern, and the chief difficulty in relation to cast wheels arises from that cause. Your obed't Servant

WM. P. PARROT, for
WALDO HIGGINSON, Superintend't.

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PROVIDENCE AND WORCESTER RAILROAD.

Providence, May 12, 1853.

Dear Sir—Yours of the 11th came safe to hand and contents noticed. We are using under our cars the wheels manufactured by Mess. Converse & Washburn, at Worcester, Mass., and they have given good satisfaction, and we consider them the best wheels we have ever used on our road. Since we have used C. & W.'s wheels we have had but very few cracked or broken wheels, and can recommend them as being the best wheel we have ever had upon our road. Yours, respectfully,

ORRAY TAFT, President.

—

WORCESTER AND NASHUA RAILROAD.

United States Hotel, Boston, 17th May, 1853.

Dear Sir—Your favor of the 13th, making inquires in regard to the car wheel manufactured by Mess. C. & W., Worcester, came to hand last evening. In reply, we are and have been using these wheels for a long time, and have no hesitation in saying that it is (in my opinion) the best wheel in America. I trust that all Railroad men who have used it will fully concur with me in the opinion I have expressed.

Yours, truly, ALEX. DE WITT, President.

—

ANDROSCOGGIN AND KENNEBEC RAILROAD.

Waterville, June 3, 1853.

Dear Sir—Your favor of the 19th came during my absence of several weeks from home, or it would have been sooner answered. The wheel we have found to stand the best on the whole has been a wheel manufactured by Converse and Washburn, at Worcester, Mass. Our climate here, in the winter, is a severe test for car wheels, and none on the whole have stood it so well as those above named.

Truly yours, EDWIN NOYES, Superinten't.

—

MERRIMACK AND CONNECTICUT RIVER RAILROAD

Concord, N. H., May 21st, 1853.

Dear Sir—I am in receipt of your favor of the 19th inst. I consider the wheel manufactured by Converse & Washburn, Worcester, Mass., much the best car wheel in use.

Yours, respectfully, J. A. GILMORE, Agent.

—

VERMONT AND MASSACHUSETTS RAILROAD.

Office Vermont and Massachusetts Railroad.
Fitchburg, May 31, 1853.

Dear Sir—I have just returned home after an absence of nearly two weeks, and find a line from you inquiring about car wheels.

The Vermont and Masachusetts Railroad have used most every kind of wheel for cars, trucks, and tenders, and I am satisfied that the best wheel that we have used is the one patented by Washburn, and manufactured by Converse & Washburn, Worcester, Mass.

We purchase no other wheel now, and have used this weel two years or more without having a single one break. Respectfully, yours,

OTIS T. RUGGLES, Superintend't.

—

STONINGTON AND PROVIDENCE RAILROAD.

Stonington, Conn., May 21, 1853.

Dear Sir—The car wheel most approved by us, and the wheel we are using altogether, is a single plate with spokes on the inside, manufactured by Converse G Washburn, Worcester, Mass.

Very respectfully, yours,

A. S. MATTHEWS, Superintendant.

Central Ohio Railroad.
New Haven and New London Railroad.
Connecticut River Railroad,
Portland, Saco and Portsmouth Railroad,
Northern Railroad.
Portsmouth and Concord Railroad.
Norfolk County Railroad.
Cheshire Railroad.
New London, Willimantic and Palmer R. R.
Rutland and Burlington Railroad.
Boston and Maine Railroad.
Norwich and Worcester Railroad.
Connecticut and Passumpsic Rivers R. R.
Concord Railroad.
Fitchburg Railroad.

The Chilled Tire in Vermont.

We learn that the Vermont Central Road have arranged for the use of the improved tire on some of their freight engines. There has been much trouble on this line, during the severe cold weather just now over, by the *bursting* of wrought iron tires; a very large number of the best manufacture having failed in that manner. The prejudice which has been visited on cast iron as a material for tires, by those in charge of the operation of some of the Northern roads, is shaken by results like the above and which occur regularly every cold season. The cast tire, although in reality of a weaker material, has an advantage in the method of its application, sufficient to place it on an equal footing with a wrought *shrunk* tire in point of safety. Since the first use of cast iron for tires it was predicted that it would fail in cold climates;—the New York roads admit the Baltimore roads can use it by reason of a "milder climate," and as New York roads adopt the improvement Massachusetts roads account in the same manner for its success "further south." Massachusetts roads have however adopted it without failure of any kind, at which the upper roads say the "climate is milder in the vicinity of Boston." *Now* it will be tested on one of the hardest roads in New England.

The wrought tire is usually *strained* so much in shrinking that it is more liable to failure than cast iron possessing its full original strength.

The Boston and Lowell road, which may be termed the "butt end" of the New Hampshire and Vermont roads, is worked with chilled iron tires for freight, and on no road, has the results of their use been more satisfactory.

Vermont and Massachusetts Railroad.

The late annual report of this company shows that there has been a gain of earnings for every year since 1849. The increase of 1853 over 1852 was $27,948 29—the total earnings of 1853 being $248,854 97, of which $113,174 10 was from freight, and $84,918 17 from passengers. The balance of earnings over expenses was $87,489 43. The construction account of the road amounts to $3,458,488 42. Total amount of bonds issued $950,000; notes payable, $175,792 68; sundry small accounts, $421 27. Total indebtedness of the road $1,135,214 15.

The directors state that the extra expenses of the year have been $27,773 11, for 80 new double freight cars, renewal of 145 tons of iron, 7,284 sleepers, &c.; but the excess of earnings over all expenses and all interest has been $16,170 19. Deducting ordinary running expenses and interest, the excess of earnings of the year 1853 is $43,943 30.

The directors refer to the difficulties with the the Fitchburg Railroad. They speak of the prospects of the road as good—especially if the tunnel project is successful. The report was accepted.

Gov. Matteson on Pennsylvani Policy.

We copy the following extract from the recent Message of the Governor of Illinois, in reference to the gauge extension at Erie. The tone of it is a most refreshing contrast to the stand taken by Governor Bigler. We are glad to hear such liberal sentiments from a State that has been guilty of some intolerant legislation, akin to that of Pennsylvania.

"While I take pleasure in communicating to you the flattering condition which has grown out of her internal improvement policy, I feel called upon to mention the serious and startling difficulties which have occurred in a neighboring State, which have given rise to much solicitude on the part of the people of Illinois, and have been productive of very great pecuniary losses to many of her citizens. The whole subject being delicate and painful, I have deemed it advisable to allude to it in the utmost spirit of forbearance. Our whole free institutions are founded upon the presumption which has thus far been fully justified, that communities and individuals will govern themselves properly with a just view to their own rights, and the rights of the surrounding masses. I indulge the strong hope that the same presumption will be justified in the case of our Erie neighbors. The adoption of railways as inland thoroughfares of commerce, give rise to new and very interesting questions. Each State may justly reserve the right to point out to them their lines and manner of operation; but when they have been in operation for months and years, and the property of people of distant regions is pursuing their track on its transit to market the right of local communities to obstruct them, and pile up the property of innocent individuals to the value of hundreds of thousands of dollars, to be exposed to the elements and other means of destruction, entirely out of the reach and control of its owners, presents other and very serious questions. If such a course is justifiable by the law, it certainly is not by any rule of morals which I have been accustomed to respect. While we are not called upon to become parties to any quarrel which may arise between the people and a railroad company, which has even by sufferance or by permission laid its track and been the channel of commerce for years, we have a clear right to expect that we shall not be made the innocent victims. Yielding to the strong hope that these difficulties will speedily disappear, I submit the whole matter to the consideration of the Legislature without the recommendation of any course of conduct in relation to it. The occurrence of such difficulties affords strong lessons of admonition to us to govern the policy of our State by the broadest principles of justice and patriotism. A single glance at our geographical position will show that we hold the key to a vast portion of the great trade of Western commerce, which finds its transit over the extended railways of the country. A na row policy might induce us to attempt to enrich ourselves by imposing upon this commerce severe exactions as it passes across our territory. But I am confident that in the adoption of such a policy we should never enjoy the consciousness of elevated motive or patriotic impulse. It is much more congenial to the wide, free spirit of the hospitable West to look with satisfaction upon the prosperity of our neighbors, and to content ourselves with those gains which are the legitimate fruits of our natural position, and the sagacity and energy of the people. No citizen of Illinois can repress the pride he must feel in looking over the continued liberal policy of the State in this direction; nor can he fail to see that our present unexampled prosperity is the natural result. Looking beyond the Mississippi to the shores of the Pacific, to the world of commerce and wealth beyond those shores, destined to seek a highway through our State, we cannot for a moment hesitate in the conclusion that sound discretion, as well as the dictates of experience, demand an uninterrupted continuence of the same liberal policy."

Railway Construction in the West.

A few weeks since, the Railroad Record published two long articles on the subject of the construction of Western Railroads, which appeared to us so extravagant as to call for some remarks, which though well intended, seem to have ruffled the usual equanimity of our cotemporary. They have brought out a long reply, but no *answer* to the positions taken by us.

The Record prefaced its articles by stating that the cost of a first class, double track, *Western* railroad, fully equipped, would not exceed $35,000 per mile. We corrected this statement by showing that the only two single track roads running into Cincinnati, with but partial accommodations and insufficient equipments, have already cost a larger sum than the Record stated to be the cost of *double* track Western roads completed and fully equipped. Upon this the Record flies in quite a passion, and attempts to make good its first statement by instancing a number of single track Western roads that have cost *less* than $35,000; a point which we never raised. The Record, however does not venture to re-assert its *first* statement, and consequently admits the incorrectness of the *premise* upon which its subsequent argument was built. If the foundation falls, the whole structure falls with it.

We have heard a great deal about the low cost of *Western* roads, and for some time after we took charge of the Journal, we really believed that a Western road could be built for $15,000 or $20,000 per mile. But experience has long since proved the incorrectness of all such opinions. In some parts of the West railroads can be constructed at a less cost than in the Eastern States. In others they cannot. The items of right of way, and graduation, etc., etc., of *Western* roads are less than similar items in *Eastern* roads. All, or nearly all other items entering into the construction of railroads cost *more* in the West than East; such as the rails, equipment, etc., etc. The total advantage is on the side of the Western roads we admit, but the difference is by no means so great as is generally supposed. The reason why Western roads appear to cost so much less than those of the East, is because the former are only *half* finished. It often happens that the track is laid, and that business trains commence running, before the road has received one-half the expenditure necessary to complete it.

There is not a finished railroad in the West, nor will there be for five years to come. Every one of them is in this market for money, and such as have been in operation the longest, are the largest borrowers. We do not say this, as anything for which western companies are censurable, or that they are not entitled to the money they seek to borrow. Far otherwise. The Little Miami, and the Cincinnati, Hamilton and Dayton Roads, would be much more efficient and profitable, had they double track, which, with the necessary equipment, would carry the cost up to $50,000. The estimated cost of what are now the most expensive railroads in N. England, did not much exceed that of *western* railroads. They were *opened* at very nearly the estimates, but experience has since shown that they were very far from being *completed*. Precisely similar will be the history of *western* roads. The cost of such as are *opened* at $20,000 per mile, will soon run up to $30,000 or $40,000 per mile. To suppose, therefore, that there is to be any very great difference in the cost of railroads, doing an equal business, in different parts of the country, is a great mistake. In proof of this, we would refer to an article in another part of the Journal, showing the comparative cost of graduation of several, in which particular exists the principal advantage of western and southern railroads over those of the eastern and northern States. The same article also shows the progressive increase in the cost of the leading New England roads.

Our *second* correction of the Record, was its estimate of the *earnings* of New England roads. The Record reasserts its statement, that these roads earn 6 per cent. upon their cost, but without adducing the proof. In this case the *onus* is not on us. If it were, we could readily make good our assertion. It requires no argument to prove the fact to a New Englander, unfortunately. It is notorious that the railroads constructed through the agricultural districts of New England, have proved disastrous failures. So much so, that the stocks of many of the roads in Maine, New Hampshire and Vermont, are hardly worth the keeping. There are not more than ten *paying* lines in the three States out of some 35 roads.

The Record thinks that Ohio will sustain as many miles of Railroad in proportion to its area as *England!* As nearly all the Railways in Great Britain are in *England*, say 5,500 miles of line, out of 7,000 in the Kingdom. A similar ratio would give 4,000 miles for Ohio. Now we do not think Ohio would, at the present time give support to 4,000 miles of railroad. Should this extent of line be constructed, we think the result would be similar to that which followed their over-construction in England, to wit: the loss of nearly one half of the capital invested. But admitting that Ohio will sustain as much millage as England in proportion to its surface, only about two thirds as many miles should be built, as the Railroads of the former country are by no means *sustained*. In England railroading is so notoriuusly overdone, that 350,000,000 of capital have been lost. Yet the Record thinks that these works may be carried to a similar excess in Ohio as in that country. A *proper* application of the illustration adduced, entirely disproves all such opinions instead of sustaining them.

We corrected the table of the the Record showing the *market* value of certain New England Road Stocks. It quoted Housatonic, and Harlem, *preferred*, which are very different affairs from the stocks upon the market. We gave the *current* quotations of the whole list. The mistakes of the Record consisted in confounding the preferred, and unpreferred, stocks.

The Record thinks that because New England is not as fertile as the West, that consequently the former can supply but very little traffic to Railroads. This is very far from being the case. In proportion to their area, the States of Massachusetts, Connecticut and Rhode Island, are capable of supplying, and do supply, at the present time, a much larger traffic to Railroads than any portion of the West. In the States named a much larger proportion of the people are travellers, for the reason they are chiefly engage in manufacturing and commercial pursuits. If the West is capable of supplying such enormous traffic to Railroads, we wonder why the receipts of these works are not greater. The Record estimates that were *eight* Railroads constructed between Scioto and the Indiana State line, running north and south, they would *all* pay ten per cent on their cost. Within the district named, there are *two* roads only, but located in such a manner as to accommodate and command nearly all the business of it. These roads, we believe, pay only *ten* per cent dividends They traverse the best portions of the State, have extensive ramifications, are free from competition, and have wide belts of fertile territory on each side of their lines.

Yet with all these advantages, the country they traverse does not afford one-third as much business, in proportion to its area, as do some portions of New England, which, according to the Record, is made up of "*Rocks and Whortleberries.*" Take the country traverse! by the Fitchburg Railroad, for instance; a comparatively barren, unproductive, and not very densely inhabited, district. It does not receive the business of one-third the area of that commanded, either by the Little Miami, or Cincinnati, Hamilton and Dayton roads; yet its receipts are larger than either, with a much less mileage! Here is a nut for the Record to crack. Will it explain how it is, that so barren and circumscribed a district, can turn out so much larger traffic than the choicest portions of the West?

The Record thinks it finds an inconsistency between our comments upon its articles, and some previous articles of our own, in which we stated that in "no part of the West can the construction of railroads outstrip the wants of the people, or their ability to supply to them an abundant traffic." Very well, we think so still. The *West* cannot build railroads as fast as they are needed. This is the idea that we intended to convey, as any one who will take the trouble of reading the articles referred to, will see. Neither do we believe that the construction of railroads is in any danger of being over-done in the West, so long as its people will furnish *one-half* the cost of their construction, as we have always insisted they should do. Where those immediately interested in railroads cannot furnish one-half, or one-third their cost, the project will very probably turn out to be premature.

So much for the *argumentative* part of the rep'y of the Record to our strictures. It entirely evades the principal points made by us;—"that double track railroads cannot be built and equipped in the West for $35,000 per mile, and that eight first class roads between the Scioto and the Indiana State line; would not pay ten per cent. upon their cost." The Record has a plenty of words for issues that we did not raise, but no arguments, no proof, for those that we did.

In conclusion the Record steps entirely out of the *record*, and abuses us roundly for the grounds we have taken in reference to the affairs at *Erie;* and zealously espouses the Pennsylvania side of the question. This is certainly a singular position for an inhabitant of Cincinnati to take, and a still more singular one for the editor of a paper devoted to the interests of railroads and commerce. A break of gauge at Erie had no other object than to saddle the commerce of Ohio with a tax, to support *Erie*. To such outrages does the editor of the Record lend himself and his paper. We must be permitted to express our belief, that by doing so, he adds nothing to its reputation or patronage.

As a matter of curiosity we annex the paragraphs from the Record in reference to the Erie matters.

"The *Railroad Journal* has issued a fulmination against the *State* of Pennsylvania—which, it considers, the whole world is about to abandon to all sorts of disgrace. A year or two since it issued another fulmination against Illinois, in relation to the Terre Haute and St. Louis railway, which was to be made forthwith, whether Illinois chose or not. Illinois did as she pleased, and so will Pennsylvania. It is positive folly to abuse a *State*—especially when that State has the whole work in her own hands.

It seems to be thought that Ohio will do something terrible on the occasion. She will do *nothing at all*. She can do nothing without injuring herself materially. Are there not the *Ohio & Pennsylvania*, the *Central*, the *Bellefontaine & Indiana*, the *Cincinnati & Marietta*, and all the railways south of the Lake Shore, directly interested in the Pennsylvania Central? Will all the great wheat counties of Ohio consent to set aside *their* interests to meddle in the Erie war? Not at all. The Erie business will be settled by the Courts and Legislature of Pennsylvania, who have the sole control over the matter. Pennsylvania will in all probability make an equitable arrangement, whenever one is sought; and, at any rate, cannot be forced from her position by abuse. Ohio will go into no flare-ups for the purpose of spiting Pennsylvania."

American Railroad Journal.

Saturday, February 25, 1854.

Stock and Money Market.

There has been considerable improvement in the stock market for the past week. The whole list shows an advance, and a number of stocks have gone rapidly upward. A better state of feeling appears to be steadily gaining ground. Money is becoming more abundant, which has caused an increased demand for railroad securities. The European news, which has ruled this market for five or six months past, appears to be losing its influence, so that the certainty of war would hardly exert a depressing effect upon our market. A steady advance in railroad securities from their recent depressed figure, may, we think, be anticipated.

Toledo and Indianapolis Railroad

The organization of a company to build a railroad between the above cities has been completed and the following directors elected:—M. Johnson, A. J. Field, H. H. Dodd, C. B. Phillips, of Toledo; J. Purdy, of Mansfield; C. M. Godfry, of Kalida; H. J. Boehmer, of Fort Jennings.

At a meeting of the Directors, H. H. Dodd was chosen President; C. M. Godfry, Vice President; Charles B. Phillips, Secretary and Treasurer.—The first annual meeting was fixed as early as June next.

The President was directed to appoint a Chief Engineer, and cause a survey of the route via Mercer, Delphos, Ft. Jennings, Kalida, Medary and Gilead, at the earliest practicable moment.

Fitchburgh Railroad of Massachusetts.

A new board of Directors has been elected to manage the affairs of this Company. The number is five instead of seven as before: viz: Alvah Crocker; E. H. Derby; John J. Swift; Thomas Whittemore and James Ellison. All of these members are well known for their exertions in behalf of the Hoosic Tunnel project.

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of $100.

NAME OF COMPANY.		Miles open.	Capital paid in.	Funded debt.	Tot. cost of road and equipm't.	Gross Earnings for last official year.	Net Earnings for last official yr.	Dividend for do	Price of Shares.
Atlantic and St. Lawrence...	Maine.	150	1,538,100	2,973,700	5,150,278	254,743	113,520	none	83
Androscoggin and Kennebec..	"	55	809,878	1,016,500	2,064,458	140,561	80,058	none	30
Kennebec and Portland.....	"	72	952,621	291,80	2,514,067	168,114	100,552	none	41
Port., Saco and Portsmouth..	"	51	1,355,500	123,884	1,459,384	208,669	.....	6	96½
York and Cumberland,.....	"	20	285,747	341,100	713,605	23,946	11,256	none	24
Boston, Concord and Montreal.	N. H.	93	1,649,278	622,200	2,540,217	150,538	79,659	none	33
Concord	"	35	1,485,000	none.	1,485,000	305,805	141,836	8	111
Cheshire	"	54	2,078,625	720,900	3,002,094	287,768	55,266	5	38
Northern	"	82	3,016,634	.....	.....	328,782	163,075	5	59
Manchester and Lawrence....	"	24	717,543	.....	.....	.....	.....	6	90
Nashua and Lowell.....	"	15	600,000	none.	651,214	132,545	51,513	8	106
Portsmouth and Concord....	"	47	.....	.....	1,400,000	.....	.....	none	....
Sullivan.....	"	26	.....	.....	673,500	.....	.....	none	21
Connecticut and Passumpsic..	Vt.	61	1,097,600	550,000	1,745,516	.....	.....	none	29
Rutland	"	120	2,486,000	2,429,100	5,577,467	495,397	266,539	none	11
Vermont Central.....	"	117	8,500,000	3,500,000	12,000,000	.....	.....	....	13
Vermont and Canada.....	"	47	1,500,000	.....	1,500,000	Leased to	the Vt. C	ent.	97
Western Vermont.....	"	51	392,000	700,000	.....	Recently	opened.	none	....
Vermont Valley	"	24	.....	.....	.....	.....	.....	none	....
Boston and Lowell.....	Mass.	28	1,830,000	.....	1,995,249	388,108	130,881	7	91
Boston and Maine.....	"	83	4,076,974	150,000	4,092,927	659,001	338,215	7	103
Boston and Providence.....	"	53	3,160,390	390,000	3,546,214	469,656	227,434	6	84
Boston and Worcester.....	"	69	4,500,000	425,000	4,845,967	758,819	331,296	7	100½
Cape Cod branch.....	"	28	421,295	171,800	633,906	60,743	30,056	2	40
Connecticut River.....	"	52	1,591,100	193,500	1,801,946	229,004	72,028	5	55
Eastern.....	"	75	2,850,000	500,000	3,120,391	488,793	241,017	7	89½
Fall River.....	"	42	1,050,000	none.	1,050,000	229,445	99,589	8	99
Fitchburg.....	"	66	3,540,000	112,305	3,623,073	574,574	232,787	6	91½
New Bedford and Taunton..	"	20	500,000	none.	520,475	164,230	43,950	7	117
Norfolk County.....	"	26	547,015	819,743	1,245,927	67,251	23,415	none	68
Old Colony.....	"	45	1,964,070	282,300	2,293,534	374,897	122,816	none	87
Taunton Branch.....	"	12	250,000	none.	307,136	137,406	24,399	8	....
Vermont and Massachusetts..	"	77	2,140,536	1,001,500	3,203,333	218,679	18,648	none	23½
Worcester and Nashua.....	"	45	1,134,000	171,210	1,321,945	162,109	66,900	4	59
Western	"	155	5,150,000	5,319,520	9,953,759	1,525,224	746,736	7	97
Stonington.....	R. I.	50	.....	467,700	.....	240,572	110,892	....	65½
Providence and Worcester...	"	40	1,457,500	300,000	1,791,999	291,417	120,892	6	95
Canal.....	Conn.	45	922,500	500,000	1,400,000	.....	.....	4	65
Hartford and New Haven....	"	72	2,350,000	800,000	3,150,000	639,529	294,269	10	128
Housatonic.....	"	110	.....	.....	2,500,000	329,041	168,902	none	....
Hartford, Prov. and Fishkill..	"	50	.....	.....	In progres	69,629	.....	none	....
New London, Wil. and Palmer	"	66	558,861	800,000	1,511,111	114,410	.....	....	39
New York and New Haven...	"	61	3,000,000	1,641,000	4,978,487	806,713	428,173	7	101½
Naugatuck	"	62	926,000	440,000	.....	.....	.....	8	....
New London and New Haven.	"	55	750,500	650,000	1,380,610	Recently	opened.	none	40
Norwich and Worcester.....	"	54	2,121,110	701,600	2,596,488	267,561	116,965	4	57½
Buffalo and New York City..	N. Y.	91	900,000	1,550,000	2,550,500	Recently	opened.	none	....
Buffalo, Corning and N. York.	"	132	.....	.....	In progres	.....	.....	none	65
Buffalo and State Line.....	"	69	879,636	872,000	1,921,270	Recently	opened.	....	130
Canandaigua and Niagara F..	"	50	.....	.....	In progres	.....	.....	....	....
Canandaigua and Elmira.....	"	47	425,509	582,400	987,627	76,760	39,360	none	68
Cayuga and Susquehanna....	"	35	687,000	400,000	1,070,786	74,241	23,496	none	....
Erie, (New York and Erie)...	"	464	10,000,000	24,003,865	33,070,863	4,318,962	1,800,181	7	78½
Hudson River.....	"	144	3,740,515	7,046,395	10,527,654	1,063,659	338,783	none	70½
Harlem	"	130	4,725,250	977,463	6,102,935	681,445	324,494	4	56
Long Island.....	"	95	1,875,148	516,246	2,446,391	205,068	44,070	none	34
New York Central	"	504	25,085,600	10,773,823	33,859,423	.....	.....		112
Ogdensburgh (Northern).....	"	118	1,579,969	2,969,760	5,133,884	480,137	195,847		29½
Oswego and Syracuse.....	"	85	350,000	201,500	607,803	90,616	43,609		70
Plattsburg and Montreal....	"	28	174,042	131,000	349,775	Recently	opened.	none	....
Rensselaer and Saratoga....	"	25	610,000	25,000	774,495	213,078	96,737	....	....
Rutland and Washington.....	"	60	850,000	400,000	1,250,000	Recently	opened.	....	....
Saratoga and Washington....	"	41	899,800	940,000	1,832,945	173,545	135,017	none	30
Troy and Rutland.....	"	32	237,690	100,000	329,577	Recently	opened.	....	33
Troy and Boston.....	"	39	430,936	700,000	1,048,357	Recently	opened.	none	....
Watertown and Rome.....	"	96	1,011,940	650,000	1,693,711	225,152	116,706	8	96
Camden and Amboy.....	N. J.	65	1,500,000	.....	4,327,498	1,388,385	478,413	10	148
Morris and Essex.....	"	45	1,022,420	128,000	1,220,325	149,941	79,252	7	....
New Jersey.....	"	31	2,197,840	476,000	3,245,720	603,942	316,259	10	131
New Jersey Central.....	"	63	986,106	1,500,000	2,379,880	260,899	124,740	3	....
Cumberland Valley.....	Penn.	56	1,184,500	13,000	1,265,143	118,617	76,890	5	....
Erie and North East.....	"	20	600,000	.....	750,000	Recently	opened.	....	125
Harrisburgh and Lancaster...	"	36	830,100	713,227	1,702,523	265,327	106,320	8	
Philadelphia and Reading....	"	95	6,656,382	10,427,800	17,141,987	2,480,626	1,251,987	7	80
Philad., Wilmington and Balt.	"	98	5,000,000	2,399,166	8,067,285	868,038	541,769	5	80

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of $100.

NAME OF COMPANY.		Miles open.	Capital paid in.	Funded debt.	Tot. cost of road and equipm't.	Gross Earnings for last official year.	Net earnings for last official yr.	Dividend for do.	Price of shares.
Pennsylvania Central	Penn.	250	9,768,155	5,000,000	13,600,000	1,943,827	617,625	....	97¼
Philadelphia and Trenton	"	30	....	....	....	....	....	....	....
Pennsylvania Coal Co	"	47	....	....	....	....	....	....	102½
Baltimore and Ohio	Md.	381	13,118,902	5,677,103	22,254,338	2,033,420	798,193	7	58
Washington branch	"	38	1,650,000	....	1,650,000	348,622	216,237	8	....
Baltimore and Susquehanna	"	57	....	....	....	413,673	152,536	....	..
Alexandria and Orange	Va.	65	....	....	In prog.	....	....	....	....
Manassas Gap	"	27	....	....	In prog.	....	....	....	....
Petersburgh	"	64	769,000	173,867	1,163,928	227,593	72,370	7	77
Richmond and Danville	"	73	1,372,324	200,000	In prog.	....	....	....	70
Richmond and Petersburgh	"	22	685,000	....	1,100,000	122,861	74,113	none	40
Rich., Fred. and Potomac	"	76	1,000,000	503,006	1,531,238	254,376	113,256	7	100
South Side	"	62	1,357,778	640,000	2,106,467	62,762	....	....	....
Virginia Central	"	107	1,673,684	469,150	2,392,215	210,052	99,077	10	50
Virginia and Tennessee	"	73	2,650,091	707,958	3,545,256	109,268	42,736	none	98
Winchester and Potomac	"	32	180,000	120,000	416,532	89,776	....	12	....
Wilmington and Raleigh	N .C.	161	1,338,878	1,134,698	2,965,574	510,038	153,898	6	....
Charlotte and South Carolina	S. C.	110	....	....	....	....	....	....	....
Greenville and Columbia	"	140	1,004,231	300,000	In prog.	....	....	....	....
South Carolina	"	242	3,858,840	3,000,000	7,002,396	1,000,717	609,711	7	125
Wilmington and Manchester	"	...	....	....	In prog.	....	....	....	....
Georgia Central	Ga.	191	3,500,000	418,187	3,465,879	986,074	535,608	8	115
Georgia	"	211	4,000,000	1,214	....	934,424	456,468	7½	....
Macon and Western	"	101	1,013,088	163,000	1,277,334	278,739	149,960	9	101
Muscogee	"	71	....	....	In prog.	59,590	21,731	....	....
South Western	"	50	586,887	150,000	743,525	129,395	71,535	8	....
Alabama and Tennessee River	Ala.	55	....	....	In prog.	....	....	....	....
Memphis and Charleston	"	93	776,259	400,000	In prog.	....	....	....	....
Mobile and Ohio	"	33	879,868	....	In prog.	....	....	....	....
Montgomery and West Point	"	88	688,611	....	1,330,960	173,542	76,079	8	....
Southern	Miss.	60	....	....	....	....	....	....	....
East Tennessee and Georgia	Tenn.	80	835,000	541,000	In prog.	....	....	....	....
Nashville and Chattanooga	"	125	2,093,814	850,000	In prog.	....	....	....	....
Covington and Lexington	Ky.	38	1,430,150	900,000	In prog.	....	....	....	63
Frankfort and Lexington	"	29	357,218	....	584,902	87,421	44,250	....	80
Louisville and Frankfort	"	65	....	....	....	....	....	....	....
Maysville and Lexington	"	...	....	....	In prog.	....	....	....	45
Cleveland and Pittsburgh	Ohio.	100	1,979,100	1,142,200	3,279,908	432,682	267,278	10	91
Cleveland and Toledo	"	147	2,000,000	1,600,000	....	....	....	....	100
Cleveland, and Erie	"	95	....	....	....	....	....	....	....
Cleveland and Columbus	"	135	3,027,000	408,200	3,655,000	777,793	483,454	12	121
Columbus, Piqua and Indiana	"	46	....	....	2,000,000	....	....	....	65
Columbus and Lake Erie	"	61	....	....	....	....	....	....	....
Cincinnati., Ham. and Dayton	"	60	2,100,000	500,000	2,659,653	321,793	200,967	....	104¼
Cincinnati and Marietta	"	...	....	....	In prog.	....	....	....	62
Dayton and Western	"	40	310,000	550,000	925,000	Recently	opened.	....	75
Dayton and Michigan	"	20	....	....	In prog.	....	....	....	....
Eaton and Hamilton	"	36	....	....	....	....	....	....	56
Greenville and Miami	"	31	....	....	....	....	....	....	....
Hillsboro	"	37	....	....	In prog.	....	....	....	....
Little Miami	"	84	2,668,402	482,000	3,169,733	667,559	352,133	10	109¼
Mansfield and Sandusky	"	...	900,000	1,000,000	1,855,000	....	....	....	....
Mad River and Lake Erie	"	167	2,387,200	1,767,000	4,110,148	540,518	113,401	....	77¼
Ohio Central	"	57	....	....	In prog.	....	....	....	79
Ohio and Mississippi	"	...	....	....	"	....	....	....	87
Ohio and Pennsylvania	"	187	1,750,700	2,450,000	....	Recently	opened.	....	....
Ohio and Indiana	"	...	....	....	In prog.	....	....	....	....
Scioto and Hocking Valley	"	44	750,000	300,000	"	Recently	opened.	....	....
Xenia and Columbus	"	54	1,291,000	300,000	1,257,714	317,000	158,500	10	107
Evansville and Illinois	Ind.	31	....	....	In prog.	237,506	....	....	....
Indiana Central	"	...	....	....	"	....	....	....	77¼
Indiana Northern	"	131	....	....	"	....	....	....	115
Indianapolis and Bellefontaine	"	83	....	....	"	Recently	opened.	....	87
Indianopolis and Cincinnati	"	90	1,128,486	1,289,000	1,869,932	Recently	opened.	....	72
Lafayette and Indianapolis	"	62	....	....	....	....	opened.	....	....
Madison, Indianapolis & Peru	"	138	2,647,700	1,241,300	2,400,000	516,414	268,075	10	70
Peru and Indianapolis	"	40	....	....	In prog.	....	....	....	65
Terre Haute and Indianapolis	"	72	632,387	663,100	1,353,019	105,944	71,446	4	108
Rock Island and Chicago	Ill.	...	....	....	....	....	....	....	....
Chicago and Mississippi	"	135	2,400,000	4,000,000	4,600,000	....	....	....	....
Illinois Central	"	...	....	....	....	....	....	....	....
Galena and Chicago	"	92	1,932,361	500,000	In prog.	473,548	286,152	....	118
Michigan Southern and Ind. N.	Mich.	315	2,800,000	3,741,564	7,276,616	1,200,922	586,929	17	119½
Michigan Central	"	282	4,856,700	3,977,563	8,618,505	1,145,598	582,816	8	103¾
Pacific	Mo.	38	1,000,000	none.	In progres	Recently	opened.	....	....

Edwin F. Johnson upon the Pacific Railroad.

We have published, and have for sale, E. F. Johnson's recent work upon the Pacific Railroad. Mr. Johnson is admitted to be one of the first Engineers in this country, and his reputation is a good guaranty that the subject under discussion has been thoroughly considered and discussed. The work is illustrated by a large map, showing all the proposed routes, a profile of the Northern Route, a map of the mountain chain traversed by it, and seven lithographic views of various points upon its line. The whole work is elegantly got up, and makes a volume of 176 Pages, Octavo.

Persons wishing to procure copies of the above work, by forwarding one dollar to our address, can have a copy of the same with the maps, forwarded by mail post paid.

Duties on Railroads Iron.

There is a strong feeling, on the part of railroad companies particularly, in favor of the removal of the duty on *Railroad Iron*. Could this feeling be thoroughly organized, we believe there would be little difficulty in effecting the desired result. It is *organization*, not an increased interest in the subject, that is needed. In view of effecting such organization, we would suggest that a meeting, or convention, be held by the different railroad companies interested. Shall we not have some response to this proposition?

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Since the above was written, we have received the following communication, to which we invite attention. We join in the recommendation for the proposed meeting.

EDITOR OF THE RAILROAD JOURNAL:—

I have been surprised that the railroad companies of the United States, struggling, as most of them are, to complete their lines in these embarrassing times, have not effected an organization for the purpose of bringing the subject of the present high duties on Rails, (amounting to nearly $1,500 per mile,) before Congress, with a view to obtain their remission.

It is time such a movement was made, and as there are at all times, a large number of railroad officers in this city from all parts of the country, I respectfully suggest a meeting at the Astor House, on Saturday evening at 7 o'clock, for the purpose of taking action upon this subject.

OHIO.

Machine Works in Alabama.

The extensive works, knows as the Winter Iron Works, at Montgomery, Alabama, were lately sold for $175,000. Col. Lewis Troost has become one of the purchasers, under whose influence the works will doubtless gain increased reputation. The beautiful steam engine, built at these works, and in operation at the Crystal Palace shows the capabilities of Alabama enterprise and skill.

Comparative Tonnage of Railroad and Canal Commerce.

The the total amount of freight moved on the Michigan Southern and Northern Indiana Railroad in 1853, was 116,635 tons. The amount received at Toledo by Canal for the same time was 225,330 tons. The freight arriving at Cincinnati by the Miami and Erie Canal 153,789 tons, and at other points 135,308 tons. Total movement on the Canal, 514,427 tons.

Adaptation of Locomotives.

BY ZERAH COLBURN.

It will not be disputed that in a selection of engines, of the best construction, a regard should be had for *adaptation* and *uniformity*. There are often obstacles in the way of attaining these ends, such as inability to procure the right kind of engines at the right time, but the propriety of the *principle* still remains. It is a fact that these ends are often overlooked in the selection of engines for first class roads, as there are abundant instances in point to prove it. Some of these may be referred to hereafter. The grounds for adaptation require to be appreciated before the true end can be gained. It is far from true that what is fit for one road is fit for another, as position, traffic, physical features, fuel, attendance, and other circumstances may be essentially different in different cases.

The power of the engines is first to be considered. Engines may be designed for great power and high speeds, or only for great loads at slow speeds. The first is the engine for a heavy express traffic on a great through route. Its perfection may determine the result of competition, and may give a road a positive advantage in point of time and accommodation. An engine of less power, and for a slower speed, is in place on roads doing only a moderate business and beyond the influence of competition. A 25 ton passenger engine would be a monstrosity on a local road, having no important connections with the great current of through travel.

The engine designed for great loads at low speeds is that for a heavy freight business, or for a road having frequent and severe grades. More moderate power will accommodate an ordinary freight, an emigrant or a mixed business. A still less powerful engine is serviceable for yard work and ballasting. These applications are all obvious in their nature.

The heavy engines require the most care for their perfection and adaptation. They must exert the greatest power with the greatest economy of space, weight and fuel. These are important requisites, especially as the demands of modern transportation are calling for the ultimate economical power of the engine; although the common *gauge* of our roads affords *room* for more power than can be economically exerted, or than is likely to to be required.

The outside connection economises space, laterally, vertically and horizontally. It reduces the weight, and especially the *disturbing* weight, and consequently the weight for counterbalance; besides bringing the disturbing weight into a better position for balancing. It involves less friction, and what is still better, it gives room for the most effective proportions of cylinder and wheel.

The link motion is another requisite in all good engines, affording the means for an economical adaptation of the expenditure of steam to the resistance of the train; simplifying the construction of the engine; and being the most reliable of any kind of reversing gear. Of the two arrangements of the link motion, the stationary and the shifting links,—the former gives equally as good results in the distribution of the steam, and has the advantages of occupying less room, being easier to reverse and requiring none of the weight, strain, and danger of the heavy counterbalance. It allows also of a better suspension, whereby the joints will not wear as fast. The varying lead, claimed for the shifting link, is had, *in effect*, by the stationary link, as the varying *travel* of the valve, (the same with either link) is the principal agent in effecting pre-admissions of steam upon the piston.

The edge frame is best, for being stiffer, affording more room for furnace, and admitting of better lateral bracing and better cylinder fastenings.

For the reduction of weight, the outside connection, hollow axles, wrought iron driving wheels, pistons, rockers, draw irons, dome caps, etc., afford greater strength with much less weight.

So also the use of moderately thin boiler iron, well stayed and double rivited at the weak points, reduces weight.

Boilers, for rapid evaporation, should have their furnaces wide compared with the length; should have free thimble-opening and large tubes. The smoke boxes should be small and not made to extend above tubes, a low level crown forming the base of the chimney.

We may then assume that generally, for *all* purposes, the outside connection, with level or nearly level cylinders; the link motion; flanged wheels (throughout, except for very short curves); the least dead weight, lowest center of gravity; the edge frame; boilers designed according to the proportions and adjustments most influential in promoting rapid combustion and rapid evaporation, and having also provision for heating the feed water by the waste heat of the tubes; will give the best results.

To these are to be added the use of the very best material, and the greatest accuracy and security of fitting in all the working parts.

The adaptation of engines then commences.—The fast passenger engine requires greater evaporative power, compared with its capacity of cylinder, than the freight engine; its hourly evaporation being generally double that of the latter. Its boiler should be capable of maintaining a higher pressure, and provision can be made for working at a somewhat higher ratio of expansion. It must always be borne in mind that the passenger engine exerts great power and experiences more severe wear than the freight engine, and that in all cases it demands the perfection of design and workmanship. Besides being more exposed to the risks of failure, the consequences of failure are far more d sastrous with the passenger than with the freight engine. Every means of *economy* should be secured in the passenger engine. The grate area should not be disproportionately large; as large furnaces, although having greater evaporative power, do not burn their fuel so economically.—The object is to get the *most* heat with the *least* necessary area of grate. The general apparatus for draught should have such adjustment as will give the largest possible area of blast orifice. The damper should close perfectly tight and should be very sensitive to any admission of air. Provision should be made for heating the feed water by the waste heat from the tubes. The cylinders should be especially well protected to guard against condensation on the higher grades of expansion. Perfect balance of the disturbing weights is especially necessary, as the irregularities due to insufficient balance increase as the *squares* of the speeds.

Beyond the evaporative power of the boiler, the relation between stroke of piston and diameter of wheel, the adjustment of valves, and the capacity of steam pipes and steam openings, are the governing points in the adaptation for speed. But speed can be had only at the sacrifice of power, and on some roads the grades are such that engines designed for speed are inefficient in moving trains of any considerable weight. Other roads, having every advantage for the maintenance of high speeds have engines incapable of quick running. Those extremes are the results of neglect in the adaptation of the engines. The New York and New Haven Railroad was originally stocked with a number of engines with 13 by 20 inch cylinders, and 6 feet wheels. This road has many and severe grades, upon which such engines are not efficient. The Boston and Lowell Road, on the other hand, having no grades exceeding ten feet per mile, a firm track, easy curves, and a large and important traffic, has but two engines having wheels *as large* as 5½ feet. The time made by the trains of this road is not generally over 20 to 25 miles per hour for accommodation, and from 25 to 30 miles per hour for express trains.

Freight engines require to be distinctive in character. They should be made to work at the speed which gives the maximum of useful effect, a speed of about 10 miles per hour. Freight engines require more adhesive weight than passenger engines and the weight may be also distributed on more points. Hence, the ten wheel engine is that best suited for freight. The adaptation of coal for fuel will probably become generally introduced in freight engines, and the "feed heater" will, in consequence, become more efficient, there being generally more waste heat with coal than wood. From running more slowly there are not the *extremes* of resistance which are encountered by the passenger engine, and therefore the highest pressures of steam and the highest grades of expansion are not of so much economy in the former as in the latter. The steam pressure being somewhat lower, the extraction of heat by the tubes, and especially with coal, can be made to a greater extent, and the tubes can therefore be longer, in proportion to the area of grate, than with the passenger engine. Tubes of from 2 inches to 2¼ inches, and of 14 feet length are found to afford good draught, and furnish ample steam of from 90 to 110 lbs pressure. From running at slow speeds and from having but moderate concentration of weight, the freight engine presents a good application for the slip chilled tire. While the four-driver passenger engine has four tons on a wheel, and runs at forty to sixty miles per hour, the six-driver freight engine need have but three tons on a wheel, and be run at from ten to fifteen miles per hour; or only three-fourths of the *bearing* weight at one fourth of the speed. The economy of the tire, in first cost and maintenance, is a great inducement to its use upon roads doing a large freight business. The finish and ornamental character of the freight engine may be much plainer than on the passenger engine. The former is generally under steam for the greatest length of time, except in cases where passenger engines only can "can double the road."

An engine for the coal trade is only an expansion of the plan of the freight engine. There is no business where *cheap* transportation is so important as in the coal trade, for the bulk of coal is greater in proportion to its value than with al-

most any other kind of freight. And in proportion to the distance through which coal seeks a market, should its transportation be economised. Economy in transportation is promoted by carrying the largest loads over the narrowest gauge, thus concentrating motive power and and reducing resistance. The coal-train engine should have extreme power, with a proper distribution of weight. The fuel should be of the same kind as the material hauled. The furnaces and tubes should be of the best *iron*; the finish of the engine should be of the plainest kind. The cast iron tire can be here used with the best adaptation and the greatest economy.

The grade engine should be one combining the greatest power with the plainest finish. The coal engine is a good engine for grades. Provision must be made in the grade engine for a sufficiently high water level, as from the length of the boiler and the inclination to which it is subject, there is danger of uncovering the tubes or furnace. The tubes must come as nearly to the crown sheet of the furnace as may be, and the gauge cocks must be placed well up in the boiler. With a boiler of the length of twenty feet, the disturbance of the water level, on a grade of 116 feet per mile, is over *five inches*. The pumps should be of large capacity, as such engines are standing much of the time, and are run but slowly when in motion. The necessity of the use of three or four pairs of coupled drivers makes uniformity of diameter of much importance. The chilled tire secures this requisite, besides being far more durable in such places, and is also renewed without the aid of any machinery, a matter of much importance in the working of engines at a distance from the repair shops.

Ballast and yard engines are also a distinctive class. Being under steam through working hours, running only for short distances, and subject to be run backwards much of the time, they require modifications for especial adaptation. I have often seen engines, built for this business, provided with copper tubes, inside cylinders, short stroke pumps, separate cut-off valves, wrought iron tires, a truck frame, and other refinements out of all place. Such engines should be of the simplest and plainest construction. They should always be outside connnected for lightness, simplicity, economy and officiency. They should have iron tubes for economy, and because the tubes of such engines are not generally in the care of the best enginemen. A short stroke pump is an absurdity on such an engine, working at slow speeds, as a full stroke pump, unless out of order, is sure to fill. The full stroke pump should have a large capacity, and a large air vessel, on both the suction and forcing sides. Arrangements for expansive working are not generally of much utility, in such engines, as they run but slowly, and for short distances, and with greater regularity of resistance. On Western roads, gravel engines have often to be run for great distances and the necessity in such cases of taking large loads may make a cut-off of some use. On such roads, however, economy of fuel is not of so much account as *reliability* of engines. A truck frame is generally uncalled for, as such engines are continually starting and stopping, often on bad rails, and need all of their weight for adhesion. Running often upon temporary tracks, and on short curves, the wheel base should be short. Unprotected by a truck frame, and running backwards much of the time, the tires should be of chilled cast iron, as the flanges are otherwise soon cut away, making them liable to leave the rails, and involving great expense for their maintenance. As a yard or ballast engine is standing much of the time, the gauge cocks should be well up, so that too much water shall not be boiled away, and the tubes become exposed in consequence. For economy in fuel, such engines should have especially tight dampers, to control the fire when standing.

As the *business* of a road should influence the selection of engines, so also should its *characteristics* determine the proportion and construction of some of the details of the engine. Undulating roads require adaptation in the size of the drivers, length of stroke, etc. A reduction of the size of drivers to the amount of six inches for every rise of twenty feet per mile, is not out of the way in an engine having 7 feet drivers for a level line. If the road be much curved the center bearing truck eases the turning of the engine; plain or flat tires may be applied to the central pairs of drivers, and with extremely short curves, much play has to be made in the journals of the axles, also between the boxes and pedestals and between the flanges and rails. On extremely short curves the draw bar of the engine may extend under the furnaces and be attached nearly beneath the center of the engine. In all engines for curved roads the wheel base must be proportionally short.

The height of bridges, tunnels, and station doors, will govern the height of chimnies, and with low chimnies they should extend downwards in the smoke box to a level crown sheet just above the tubes. With some forms of patented spark arresters, much room is required above the deflector for clearance. Such pipes reduce the effective height of the chimney, and are not so well adapted to run under low bridges as some other forms of pipes which require less waste room.

The character of the fuel burnt influences the proportions of the boilers. Good wood, well seasoned, can be burnt more economically on a small than on a large grate. The size of the furnace controls the amount and intensity of heat generated, and should furnish such amount as can be economically absorbed by the tubes. If less, the pressure of steam will fall,—if more, the fuel is wasted, as much of the heat goes up the chimney. With such fuel as possesses superior heating qualities a smaller bulk furnishes the desired amount of heat. Green wood, or wood of any kind, having inferior heating qualities, cannot be economically burnt except furnished for about the ordinary cost of cutting and hauling for short distances. To be burnt at all and be efficient in producing steam, the furnace should be large and the tubes short. The furnace should be deep especially. In some situations, economy of fuel is not of so much consequence as reliability and efficiency of engines; not but that economy is consistant with both of these requisites, but that on those roads where fuel is cheapest there are often the fewest engines, and these from storms or other unusual causes must often be overworked.

Coal burns closely, and therefore requires a large grate and thin fire to pass sufficient air and to prevent overheating. Its intense heat would act less upon copper than iron sheets, were it not that the sharp particles projected by a strong blast are found to have a destructive mechanical effect on copper. Thin iron of the best quality, ample air opening, a large and shallow furnace, with the side sheets protected from the heat by closing up the grate for a few inches around its margin, and movable grate bars, will give the best results in burning hard coal. With softer coal, and with coke, copper furnaces are in general use.

Cost of Railroads.

Every new railrood project in its first conception it sure to be flanked by estimates of *cost*, "sufficient", as is invariably announced, "to place the road in complete running order". In justice to the engineers and financial agents of these works it is fair to say that in some cases the road is *put in operation* at a cost not executing the estimates. But to argue that the cost of a road, in the condition in which it is opened, represents the cost of a complete and permanent work, is a fallacy. No fact is better established than that the construction accounts of most of our roads, after the line is opened for business, increase in a more rapid proportion than the receipts.

The Journal has often stated the latter fact by comparisons of the original and ultimate construction accounts of old roads. This account has been often *doubled* in periods wherein the receipts have incteased but fifty per cent. In our number of Septembr 24th, 1853, we gave the construction accounts, receipts, dividends and stock value of several of the older roads in New England, for each year, for a period of eleven years. The general result was as follows for 1843 and 1852.

The first line of figures for each road is for 1843.

Road.	Cost.	Value.	Gross Earnings.	Nett Earnings.	Div.
Worcester.....	$2,764,400	$107	$383,367	$176,726	6
1852.....	4,845,966	101	755,819	331,397	7
Providence...	1,892,800	86	233,386	108,014	6
1852.....	3,546,208	86	429,484	212,626	5½
Maine.....	1,260,300	88	178,745	86,990	6
1852.....	4,092,926	405	661,521	338,215	7
Lowell.....	1,978,300	*595	277,315	167,948	8
1852.....	1,996,249	*480	383,103	125,881	7½
Eastern 1844.	2,388,600	104½	337,238	227,919	7½
1852.....	3,120,391	93	488,973	241,018	8
Western.....	7,087,200	46	573,882	269,909	0
1852.....	9,963,700	98½	1,339,873	693,194	8

* Par value $500.

Increase of construction accounts has been necessary, in the long run, in the case of almost every road in New England or elsewhere. The business developed by the roads (what is called the *prospective* business of *new* roads, and claimed by them as *clear gain*) has invariably involved heavy outlays for increase of establishment, corrections of location, &c. While the ordinary accession of this business has increased the operating expenses in proportion.

Every road running into Boston has largely increased its construction account for new freight, passenger, engine, wood and water stations. The Providence road, especially has incurred extraordinary outlays for its connection with the Stonington road and new depot in Providence, as well as new stations in Boston.

The Lowell road, *since* 1852, has completed a large and expensive passenger station in Lowell, a capacious and first class machine shop, with the best description of stationary machinery, at East Cambridge: and is *now* engaged in extending its line into the business centre of Boston at a cost for pile bridging, land, tracks, buildings and fixtures of perhaps $300,000.

A large part of the equipment of the Boston and Lowell Railroad also, for which little or no depreciation has been allowed in yearly expenses, is in such condition as to require to be soon replaced if the road expects to do a first class business.

The Fitchburgh road, not included in the above list, has incurred large outlays in establishing its new stations in Boston, Charlestown and Fitchburgh; improvements made since the opening of the road for business, and made, indeed to replace structures of a quite permanent character.

So with all the others. Every accession of business has required *accommodation*. Freight has required warehouses, docks, yards, siding, turntables, motive power, &c., &c. Passengers have required larger, more elegant and expensive stations, motive power and other equipments, and the establishment of stations at new points. The local business, which is the most reliable resource of all roads, requires vastly more outlay for its accommodation, in proportion to its amount, than foreign business.

Now these results will be precisely the same on all Western roads. They have an original advantage in the cheapness of their graduation and of right of way. In many other respects, in the cost of rails, ballasting stations and equipments, they will cost more than for the same portion of Eastern works.

Very few Western roads have yet come up to the necessities of double tracks; while their *buildings* and many of their fixtures are of a cheap and temporary description. They appear, in their gloss of newness, "elegant" and "capacious" enough, but time, increase of business and *fire* will yet involve as great expenses as Eastern roads have incurred for similar purposes.

To show the advantages which Western roads possess in cheapness of graduation, masonry and bridging, we may compare the *estimated* cost of these items for some of their new roads with the *actual* cost of the same for Eastern roads.

Cost of Graduation, Masonry and Bridging.

			Per mile.
Boston & Lowell	28 miles,	double track,	$15,186
Boston & Maine	88 "	½ do.	15,000
B. & Worcester	69 "	⅔ do.	14,517
Western	156 "	⅓ do.	29,434
Fitchburgh	66 "	¾ do.	13,658
Cheshire	54 "	single.	28,225
Vermont & Mass.	77 "	single.	21,565

We have given the Cheshire and Vermont and Massachusetts roads in this list, not that they are among the principal Eastern roads, but that they have been among the most difficult to build, and their physical features are even now more severe than on the average of other roads in the same States.

Estimated Cost of Graduation, Masonry and Bridging for single-track Western roads.

		Per mile.
Indiana and Illinois Central	150 miles,	$3,326
Indiana and Bellefontaine	83 "	2,000
Indiana and Terre Haute	74 "	4,965
Pittsburgh and Cincinnati	"	8,000
Mississippi and Wabash	251¼ "	6,091
Lake Erie, Wabash and St. Louis	170 "	5,260
Mobile and Ohio (Southern)	594 "	8,588

In Operation.

Little Miami, about 5,000

Giving Western roads, generally, the advantage of $10,000 per mile in first cost, we may assume that a mile of railroad in the West, equal in condition to one costing $60,000 per mile in New England, will cost $50,000.

In such proportion can competition in the West exceed, with equal profit, that in New England.

That Western roads are not yet *completed* is well known to all who are acquainted with them. On the Cleveland, Columbus and Cincinnati line, a single track road, only a few permanent structures are put up. The station buildings at Cleveland and Columbus are of *wood*. Engine houses and repair shops, characteristic of a great line, are wanting. At Cincinnati, the freight station is of but limited capacity, while the engine houses and shops at Fulton are not such as the prospective business of the road will demand. These facts, and many others, of the *incompleteness* of this road are best known to those directly engaged in its management and operation. So of the Hamilton and Dayton. It has a second track to lay, an engine house at Cincinnati to build, as well as a passenger or freight house, according to the ultimate destination of the present building; buildings to erect at Hamilton and Dayton, and many other heavy expenditures to make. As fast as Western roads *develope* their business their construction account must rise to meet it.

New York Central Railroad.

The following is given as the general statement of Receipts and Disbursements (though in part estimated) of the Central Road for the nine months ending on Feb. 1, 1854:

Gross receipts for the nine months:—		
From passengers	$2,410,435 26	
For freight	1,512,427 85	
Total receipts		$3,922,863 11
Disbursements, including special expenditures	2,042,328 26	
		$1,880,534 85
Deduct nine months interest, at 6 per ct., on debt certificates ($8,885,210) and on debts of the old companies assumed under the consolidation agreement ($1,861,823), in all say $10,747,033	$483,616 49	
Proportion of sinking fund for nine months to pay debt certificates, at the rate of 1¼ per cent., per annum	83,298 84	
		566,915 83
Total receipts for nine months, after payments as above		$1,313,619 52

Vermont.

The stockholders of the Connecticut and Passumpsic Rivers Railroad met at White River Junction on the 26th ult., and voted to extend their road to the Canada line. The stock of the road has been gradually but steadily depreciating in market and it is thought that by extending it and forming a connection with Montreal, the stock must improve. The people along the line of the proposed extension are very sanguine that the stock will be good, and at any rate that the gain in the value of real estate and the increased facilities of transportation will much more than balance any loss that may be sustained in stock.

Rutland and Washington Railroad.

At the annual meeting of the Rutland and Washington Railroad Company held at Poultney, on the 1st February, the following persons were elected directors for the ensuing year:—Merritt Clark, Ponltney; George W. Strong, Rutland; J. Bradley, Burlington; J. W. Bishop, Granville; J. P. Eastman, Boston; James W. Baldwin, Boston; A. Latham, White River Junction.

At a meeting of the Directors, George W. Strong was elected President; John Bradley, Vice President; James W. Baldwin, Treasurer; Thomas H. Canfield, Superintendent; Z. H. Canfield, Clerk.

Railroads of the State of New York--Report of the State Engineer.

We give below the annual Report of the State Engineer on the railroads of this State, which will be found a very interesting and instructive document. The accompanying tables will be published at another time.

To the Honorable the Legislature:

The annexed table A A furnishes a list of all the railroad corporations of this State, including those associations that have filed their articles in the office of the Secretary of State, and also shows the date of the filing of their annual reports in this office.

The annexed tables A to I inclusive, furnish all of the information which is contained in the reports.

These tables will be given hereafter.

The length of all the railroads in operation in the State is	2,432 miles.
The length of railroads laid is about	2,497 "
The length of double track in addition to the above is	664 "
The number of locomotives in use is	586
The number of passenger cars in use is	834
The number of baggage and freight cars in use is	6,895
The number of miles run by the passenger trains is about	6,594,963
The number of miles run by the freight trains is about	4,227,807
Total number of miles run	10,822,770
The whole number of miles travelled by the passengers is about	531,572,298
The whole number of miles each ton of freight was moved, or the number of tons moved one mile, is about	246,554,492
The capital stock of which is about	$112,038,131 45
The capital stock paid in is about,	61,238,829 22
The amount of funded and floating debt is about	59,669,478 38
The amount paid for construction and equipment is	117,707,620 58

The average distance which each passenger travelled, would appear from the footing of the reports to be 44¼ miles, and the average distance

which each ton of freight was moved, would appear to be 65½ miles. But these average distances should be slightly increased in consequence of a portion of the passengers and freight being carried over two or more roads, and the number of passengers and tons of freight being in those cases repeated on each road.

Twenty-three railroad corporations have made full reports, from which the following statements were made:

The length of railroads is	2,103 miles.
The capital stock, as per charter.	$54,748,800 00
" " subscribed.	50,137,263 03
" " paid in	47,430,865 04
The amount of funded debt is	43,346,781 27
" " floating debt is	7,111,590 64
Amount expended in grading and bridging	35,457,962 75
Amount expended in superstruction	7,681,097 75
Amount expended in station buildings	3,214,424 73
Amount expended in engine houses and machine shops	1,209,205 76
Amount expended for land damages and fencing	7,781,299 78
Amount expended for engineering and agencies	3,254,501 64
Amount expended for locomotives and cars	9,686,520 77
Total amount expended in construction and equipment, including grading and superstructure	95,466,243 59
Amount expended on do. during the year	19,130,411 44
Whole length of the road laid is miles	2,093
Whole length of second track laid on the above is miles	554
Number of locomotives	490
Number of passenger and emigrant cars	595
Number of baggage and freight cars	5,388
Number of miles run by the passenger trains for the year	5,234,963
Number of passengers carried on the cars as reported*	2,841,147
Number of miles travelled by all the passengers	397,272,298
Number of miles run by freight trains	3,564,807
Number of miles of movement of the freight	219,454,492
The cost of maintenance of way (17 roads —— miles only reporting this item)	$1,447,876 65
Charged to passenger business	$874,895 50
Charged to freight	606,893 08
The cost of repairs of machinery on 18 roads reporting is	1,403,154 81
Charged to passenger business	$817,570 51
Charged to freight	564,771 35
The cost of operating on 19 roads reporting is	4,159,310 51
Charged to passenger business	$2,155,597 92
Charged to freight	1,945,990 64
The receipts on 19 roads reporting are,	
From passengers	$6,799,953 82
From freight	5,890,638 10
From other sources.	602,298 46
	$13,292,890 38

The payments other than for construction, on 19 roads, were—

For transportation	$6,418,187 71
For interest on debts	2,644,252 63
For dividends	2,217,536 04

The average cost of construction and equipment per mile of road of those railroads which have reported these items, has been as follows:

For graduation, masonary and bridges for 2,066 miles of road	$17,162 61
For superstructure, including iron, for 2,066 miles of road	11,915 61
For station buildings for 2,066 miles of road	1,555 87
For engine houses and machine shops for 2,066 miles of road	585 29
For land and fencing for 2,066 miles of road	3,751 30
Total expense of construction and equipment for 2,105 miles of road	$45,091 84

The number of locomotives on 2,076 miles, is one to 4⅓ miles of road.

The number of passenger cars on 2,076 miles, is one to 4⅓ miles of road.

The number of freight cars on 2,076 miles, is one to 38-100 miles of road.

The average mileage on the passengers for each mile run by the trains, 76.

The average distance travelled by each passenger is nearly 48½ miles.

The average speed of the express trains when in motion, is 40 miles per hour.

The average number of tons of freight for each mile run by the trains is 62 tons.

The average distance each ton of train was moved, 72¼ miles.

The average speed of the freight trains when in motion, is 16 miles per hour.

The average weight of the freight trains, exclusive of the freight carried, is 160 tons.

The roads reporting the amount of freight carried show an aggregate of 2,831,336 tons passing over the roads, but as the same freight is frequently carried over two or more of connecting roads, on each of which it is reported, the footing of these several amounts does not show the true aggregate of the tonnage carried. As near as can be ascertained, about one and a half millions of tons of freight were carried on all of the Railroads of the State.

The reports furnish the number of tons of each classification of freight carried, but as the aggregate return must necessarily contain the errors above mentioned, these aggregates are only useful to show the proportions of each description of freight shipped, which are nearly as follows:—

The tonnage of the product of the forest is 12 per cent. of the whole tonnage.

The tonnage of animals, is 20 per cent of the whole tonnage.

The tonnage of vegetable food is 22 per cent of the whole tonnage.

The tonnage of other agricultural products is 4 per cent of the whole tonnage.

The tonnage of manufactures is 12 per cent of the whole tonnage.

The tonnage of merchandise is 11 per cent of the whole tonnage.

The tonnage of unclassified articles is 17 per cent of the whole tonnage.

The average cost of maintenance of way per mile of road, is as follows:—

	Charged to the business of Passenger.	Freight.
For repairs of road bed	$374 31	$259 61
" " " buildings	22 87	17 62
" " " fences	11 38	6 83
" taxes	46 87	38 75
All expenses of maintenance of way	$455 43	$322 81

For all expenses both passengers and frght, $699 12

The average cost of repairs of machinery per mile run by the trains, is as follows:—

	Cents.	Cents.
For repairs of engines	8.78	7.70
" " " cars	6.07	7.30
" " " tools	0.64	0.70
" " " oil and waste	0.97	1.10
For all repairs of machinery	16.45	16.80

For all repairs both of passenger and freight.

The average cost of repairs of machinery per passenger and per ton of freight carried one mile, is as follows:—

	Mills.	Mills.
For repairs of engines	1.10	1.20
" " " cars	0.80	1.20
" " " tools	0.10	0.10
" " " oil and waste	0.11	0.10
For all repairs of machinery	2.11	2.60

For all repairs both of passenger freight.

The average cost of operating the road per mile, run by the trains is:—

	Charged to the business of Passenger. Cents.	Freight. Cents.
For office expenses, stationery	0.90	1.10
" agents and clerks	4.30	5.56
" labor, loading and unloading	—	9.33
" porters, watchmen and switchmen	2.60	2.31
" wood and water station attendance	0.93	0.79
" conductors, baggage & brakemen	5.00	6.10
" enginemen and firemen	5.00	6.10
" fuel, cost and labor of preparing	13.60	15.50
" oil and waste for engines	1.83	2.24
" oil and waste for cars	0.69	1.30
" loss and damage to goods and baggage	0.57	1.30
" damages for injuries to persons	1.20	0.32
" damages to property and cattle	0.48	0.44
" general superintendence	1.20	0.38
" contingencies	4.50	3.90
For all expenses of operating	42.80	57.67

The same per passenger and per ton, carried one mile:—

	Mills.	Mills.
For office expenses and stationery	0.10	0.20
" agents and clerks	0.54	0.90
" labor, loading and unloading	—	1.50
" porter, switchmen and watchmen	0.34	0.30
" wood and water station attendance	0.10	0.10
" conductors, baggage and brakemen	0.64	1.00
" enginemen and firemen	0.64	1.00
" fuel—cost and labor of preparing	1.70	2.50
" oil and waste for engines	0.23	0.30
" oil and waste for cars	0.10	0.20
" loss and damage to goods and baggage	0.10	0.20
" damages for injuries to persons	0.32	0.05
" damages to property and cattle	0.06	0.10
" general superintendence	0.17	0.20
" contingencies	0.52	0.65
For all expenses of operating	5.56	9.20

The average receipts per mile of road are as follows:

From passengers	$3,270 78
" freight	2,833 40
" other sources	289 70
Total	$6,393 88

The receipts per mile run by the trains are as follows:

From passengers	$1 34
" freight	1 78
" passengers, freight and other sources	1 56

The receipts per passenger per mile carried was 1¾ cents.

The receipts per ton of freight carried one mile was 2 8-10 cents.

*The actual number of passengers carried is considerably less than the number above stated.

By comparing the foregoing average expenses with those furnished in the last report, it will be observed—

That the cost of repairs of the track per mile of road exceeds that of the preceding year nearly fifty per cent., but that the repairs of machinery per mile run by the train is about the same. The better condition of the track has prevented the expense for repairs of machinery from increasing with the increased rates of speed which are now adopted.

The expense of operating the roads has increased about twenty per cent. over those of the preceding year, owing to the increased speed of the trains, and to the higher price of labor.

The tables which have been prepared show the comparative cost of construction and repairs, and of operating each road, and the average results afford very useful and reliable information on these interesting subjects.

It is to be regretted that all of the railroad companies do not prepare their reports with the same care and accuracy that is generally observed.

The manner which has been adopted for preparing these tables furnishes the means of detecting many of the errors, and it is believed that the publication of the errors will be found one of the most effectual means of inducing more care in the preparation of the reports.

In my last report, I pointed out some striking discrepancies and suggested that additional authority should be conferred on the State Engineer, to enable him to enquire into the accuracy of the returns made to his office. I respectfully renew this recommendation.

The following statements, which are exhibited by the tables, will show how widely the cost and expenses of the various roads differ from each other.

	Highest.	Lowest.
Cost of graduation and masonry per mile	$35,099 38	$5,540 57
Cost of superstructure per mile	25,218 02	5,040 14
Cost of land and fences per mile	6,448 93	1,080 28
Cost of construction and equipment per mile	81,812 16	16,848 98
Cost of graduation and masonry per mile of single track	21,507 70	5,200 52
Cost of superstructure per mile for single track	12,150 50	4,896 32
Cost of land and fences per mile for single track	5,573 77	1,140 23
Cost of construction and equipment per mile for single track	50,131 68	16,040 41
Cost of maintenance of way per mile run by passenger trains,—cts.	31 39	10 98
do. do. freight trains	56 39	8 05
Cost of repairs of machinery per mile, passenger trains	25 57	4 31
do. do. freight trains	27 58	7 93
Cost of operating, per mile, passenger trains	72 79	22 48
do. do. freight trains	226 79	80 12
Cost of repairs of machinery, per mile run by passenger trains,—cents:		
Cost of repairs of engines	14 44	3 27
do. cars	9 29	0 70
do. tools	1 59	0 03
By freight trains, repairs of engines	17 68	1 69
do. do. cars	18 02	2 54
do. do. tools	0 85	0 16
Cost of operating per mile run by trains—		
Passenger agents,—cents.	10 85	1 17
Fuel	29 15	3 89
Conductors, &c.	10 49	0 86
Enginemen	8 33	2 96
Freight agents	67 86	1 84
Fuel	52 75	5 58
Conductors, &c.	48 12	3 05
Enginemen	40 12	2 75

To obtain an accurate average, it has been necessary to reject some of the lowest results, and such of the reports as appeared to be evidently erroneous.

The tables, in some cases, show pretty plainly that these errors are caused either by carelessness or design, probably for the purpose of reducing the expense of some particular item.

The whole number of persons carried in the cars on 20 railroads	8,174,363
Number of miles travelled	397,272,298
Whole number of passengers injured	19
Of whom were killed	11
Whole number of employees injured	97
Of whom were killed	56
Whole number of others injured	93
Of whom were killed	70
Making the total number injured	209
Of whom were killed	137

One passenger was killed for every 36,115,663 miles travelled, and one passenger was injured for every 49,659,037 miles travelled.

The classification of these accidents is as follows:—

	Killed.	Injured.
Jumping on or off trains in motion	14	5
Fell or thrown from train	19	8
Collisions of trains	9	13
Trains thrown off the track	5	5
Run over while walking, standing or lying on the track	57	17
Collisions with vehicles at road crossings	10	2
At work or standing by trains	5	16
Standing on platforms	3	
Defective machinery	7	4
Other accidents	7	3
	136	73

The Albany and West Stockbridge, Buffalo, Corning and New York, Buffalo and New York City, Sacketts Harbor and Ellisburgh, and Schenectady and Troy companies have not included in their reports any statements in relation to accidents, and it is not known to the department whether or not any have occurred upon these roads.

It will be observed how few accidents have occurred to passengers from causes beyond their own control.

One passenger was killed from such causes for every 198,636,149 miles travelled, and one passenger injured for every 66,212,050 miles travelled.

Twenty-one per cent. only, of the accidents causing death, and thirty-three per cent. of the accidents not causing death to the employees, were from causes beyond their control.

By a comparison of the ratio of accidents, and miles travelled in 1852, with that of 1853, it will be observed that during the last year the passengers travelled nearly three times the distance travelled in the former years before meeting with an accident causing death, and one quarter further before meeting with an accident not resulting in death.

These evidences of the increased safety of railroad travelling, both to the passengers and the workmen, will be as gratifying to the passengers of railroads as they are to the public, especially when it is remembered that the speed of trains has been greatly increased during the past year.

This is partly due to the better condition in which the track and machinery are now maintained, and partly to the observance of greater care on the part of the travellers, and to the exercise of greater skill on the part of the managers and workmen. Respectfully submitted.

WM. J. McALPINE.

Albany, Feb'y, 1854.

Freight Tariff from New York to Chicago.

The New York Central, Great Western and Michigan Central companies have issued their tariff of freights between New York and Chicago.

1st class: Agricultural implements, furniture, stoves, hardware, etc. per ton	$1 87	pr ton pr mile 3·9 c.
2d class: Books, fresh meat, hides and groceries	1 40.	" " " " 2·9 c.
3d class: Dry goods and miscellaneous	1 15.	" " " " 2·4 c.
4th class: Anchors, castings, iron, heavy goods in baskets, etc.	72.	" " " " 1·5 c.

The rates from Boston to Detroit and Chicago on the several classes of freight are as follows:

	Boston to Detroit.	To Chicago.
First class per 100 lbs	$1 52	$2 00
Second " "	1 16	1 50
Third " "	0 97	1 25
Fourth " "	0 77	1 00

From Chicago and Detroit the rates going east are the same.

Live stock are carried at special rates, by the car load, as follows:

From Chicago to Detroit	$35 00
From Detroit to Suspension Bridge	40 00
From Suspension Bridge to Albany	60 00
	$135 00
From Albany to Boston	30 00
From Chicago to Boston	$170 00

The animals to be fed and taken care of by the owner, and at his risk.

Receipts of Railroad Iron at Cleveland.

A. N. Gray, Esq. of Cleveland, has received for forwarding, during the past year, above 40,000 tons of railroad iron. The following comparative statement of his business in this line for the last five years, shows something of the progress of railroads at the West, besides being an indication of the business of Cleveland.

	Cargoes.	Rails.	Tons.
Am't of iron receiv'd for 1849	22	20,365	3,393
" " " 1850	89	82 888	13,813
" " " 1851	203	170,086	28,342
" " " 1852	269	231,463	42,352
" " " 1853	306	230,297	43,665
	889	735,099	131,565

The Cleveland *Herald*, from which we make the above statement, adds:

"In addition to the receiving, cutting, and reshipping of the iron, there is another duty of quite equal importance, that of assorting. Different patterns often compose the same cargo, varying often not the sixteenth of an inch, and not observed by shippers, engineers, or even track-layers. They make, however, the roughest of roads when laid down miscellaneously. The Michigan Southern Road had to take up five miles of its track to rectify the assorting. Mr. G.'s experience is such that he and his hands recognize the different patterns at sight, and save all mistakes on that score.

No less than 20,000 tons have been ordered during the past year which have not been received here, having been held back on account of the tightness in the money market. Of the 43,665 tons received, about three hundred tons was the compound rail, from Newcastle, Pennsylvania; all the rest was imported from England. The average cost of railroad iron during the past year has been $70 a ton. The Ocean freight to New York and Quebec during the past year has been from 28s. to 33s., a very considerable increase on last year's prices. Freights will be still higher next year—

contracts having been already made at from 40s. to 45s."

Providence and Worcester Railroad.

The following gentlemen have bee chosen Directors of the above road for the current year, viz:

H. N. Slater, Moses B. Lockwood, Daniel W. Vaughan, Welcome B. Sayles, Providence; Wm. Dickinson, Wm. M. Bickford, Alexander Dewitt, Worcester; J. Newton Perkins, Erastus Williams, Norwich: Paul Whitin, Whitinsville; Edward S. Hall, Welcome Farnum, Blackstone; Aaron Rathbone, Woonsocket; Isaac Livermore, Oliver Deane, Edward Crane, H. M. Holbrook, Philo Sanford, Boston. Mr, Welcome Farnum was elected President of the Company. This election throws the Providence and Worcester Road into the hands of the Norfolk County Road interest.

Notice to Contractors.

SEALED PROPOSALS will be received at the Office of the undersigned in Indianapolis until the 15th day of March next, for the Grading, Masonry and Bridging of that portion of the Indiana and Illinois Central Railway, between the West line of Edgar County and Decatur Illinois, being for a distance of about 53 miles.

The Map and Profiles together with the Plans and Specifications, will be ready for inspection at the Office of the Company in Decatur on and after the 1st day of March.

Any further information may be obtained at the Office of the undersigned in Indianapolis.

M. C. STORY & CO.

Indianapolis, February 7th, 1854.

C. Floyd-Jones.,

Division Engineer 3d and 12th Divisions.
ILLINOIS CENTRAL RAILROAD.
Vandalia, Ill.

Boiler and Tank Rivets, Nuts and Washers;

All Sizes of

Bolts and Bolt Ends

for Sale by
BRIDGES & BROTHER,
64 Courtland st., N. Y.

Passenger Cars for Sale.

TWO first class Passenger Cars, built by one of the best car builders in the country, for the Baltimore and Ohio Railroad.

The above presents a rare opportunity to any Railroad Company wishing first class cars for immediate use.

They will be sold at a bargain for cash or good paper. Enquire at the office of Bridges & Brothers, 64 Courtland Street.

New York, Feb. 21st, 1854.

New York and Erie R. R.

PASSENGER TRAINS
leave Pier foot of Duane street, as follows, viz:—

BUFFALO EXPRESS, at 7 a. m. for Buffalo direct, over the N. Y. & E. R. R., and the B. & N. Y. City R. R., without change of baggage or cars.

MAIL, at 8½ a. m. for Dunkirk and Buffalo, and intermediate stations. This train remains over night at Elmira, and proceeds the next morning.

WAY EXPRESS, at 12½ p. m. for Dunkirk, and intermediate stations.

ACCOMMODATION, at 3 p. m. for Delaware and intermediate stations.

NEWBURG EXPRESS, at 4 p. m., for Newburg.

WAY PASSENGER, at 4 p. m., for Piermont and intermediate stations.

NIGHT EXPRESS, at 5 p. m. for Dunkirk and Buffalo.

On Sundays only one Express Train—at 5 p.m.

These Express Trains connect at Dunkirk with the Lake Shore Railroad for Cleveland, Cincinnati, Toledo, Detroit, Chicago, etc.

CHAS. MINOT, Sup't.

Railroad Iron.

2000 TONS Railroad Iron, weighing about 59 lbs. per yard, "Erie" pattern of G L and "Crawshay" manufacture, now on the way from the shipping ports in Great Britain to this port, for sale by

P. CHOUTEAU, Jr., SANFORD & CO.,
December 4, 1852. No. 51 New street.

To Contractors.

CONSTRUCTION OF THE NORTH SHORE RAILWAY.

THE Directors of THE NORTH SHORE RAILWAY, from Quebec to Montreal will receive tenders for the construction of said Railway or sections thereof from this to the fifteenth day of March next.—For information, &c., apply personally or in writing to the undersigned.

HECTOR L. LANGWIN,
Sec'y. & Treasr. N. S. R. C.
Quebec Feb. 14, 1854. Buade St., Quebec.

OFFICE CINCINNATI, HAMILTON & DAYTON R. R. Co.
CINCINNATI, Feb. 14, 1854.

THE Directors have this day declared a dividend of Five per Cent. on the capital stock of this Company, payable at the office of the Company in Cincinnati on and after the 25th inst., till which time the Transfer Books will be closed; and at the Ohio Life Insurance and Trust Company's Office in New York, on and af.er the 15th Proximo. By order of the Board.

FRANK. S. BOND,
Sec't'y.

To Railroad and Canal Co.'s, Contractors, &c.

THE undersigned would direct the attention of Chief Engineers and Contractors to the facilities they possess for supplying them with laborers, mechanics, &c. of any description, and also to inform them that they forward such men to whatever destination they may be required.

Companies or Contractors desirous of receiving steady and industrious men, will be promptly supplied at the shortest possible notice.

JOHN J. HELLING & CO.
No. 85 Greenwich street, New York.

Rail Road Letting.

PROPOSALS will be received at the Office of the Company in the City of Evansville, Indiana, until 6 o'clock, P. M., of *Wednesday, 15th day of February*, 1854, for the *Grubbing, Grading and Bridging* of that part of the 1st Division of the

EVANSVILLE, INDIANAPOLIS, AND CLEVELAND STRAIGHT-LINE RAIL ROAD,

Extending from Evansville to the Crossing of the Ohio and Mississippi Rail Road, in Daviess County, a distance of fifty-four miles.

The work will be divided into sections of about one mile each, and proposals will be received for one or more sections, or for the whole line.

Maps, Profiles and Specifications will be ready for the examination of bidders on and after the 1st of February, and all necessary information given on application to W. C. MOORE, Chief Engineer.

O. H. SMITH, PRESIDENT,
W. CARPENTER, VICE PREST.
Evansville, Jan. 2, 1854.

Railroad Letting.

PROPOSALS will be received by the undersigned at the Engineer's Office, Dover, Delaware, until March 14th, inclusive, for the Graduation, Masonry and Superstructure of the DELAWARE RAILROAD, extending frym the New Castle and Frenchtown Railroad to Seaford, a distance of 70 miles, through a healthy region, and convenient to procure hands and supplies.

The work will be divided into sections of about 4 miles each.

Maps, profiles, and specifications will be ready for the examination of contractors, after the 1st of March.

Bidders personally unknown to the undersigned, will be expected to produce satisfactory evidence of their responsibility.

D. H. KENNEDY,
feb.18-tm14 Resident Engineer.

Valuable Engineering and Mechanical Works,

IMPORTED and FOR SALE by
JOHN WILEY, 167 Broadway.

DEMPSEY'S PRACTICAL RAILWAY ENGINEER. 1 vol. 4to, with 60 Engravings, bound in half Morocco	$11,00
SCOTT'S ENGINEERS' AND MACHINISTS' ASSISTANT, 2 vols. Quarto	20,00
TREDGOLD on the LOCOMOTIVE ENGINE, half calf	15,00
" on the MARINE ENGINE, half calf	24,00
" on the STATIONARY ENGINE, &c., half calf	24,00
TREATISE on the STEAM ENGINE by the Artizan Club	6,00
WEALE'S THEORY, PRACTICE and ARCHITECTURE of BRIDGES, 3 large vols., half bound	25,00
" SUPPLEMENTARY VOL. (just published), half bound	14,00
TRAUTWINE on RAILROAD CURVES, turk	1,00
" on EMBANKMENTS AND EXCAVATIONS	1,00
WILMES' HANDBOOK of PLAIN and ORNAMENTAL MAPPING, and Engineering Drawing, for Civil and Mechanical Engineers	7,50
WOOD'S PRACTICAL TREATISE on RAILROADS, 8vo	5,00
RYDE'S TEXT BOOK for the USE of ARCHITECT'S, ENGINEERS, SURVEYERS, &c. 1 vol Royal 8vo	8,50
GREGORY'S MATHEMATICS for PRACTICAL MEN. 8vo	6,00
BARLOW on the STRENGTH of MATERIALS and on CONSTRUCTION	4,50
LARDNER on the STEAM ENGINE. New Edition	2'00
SCRIBNER'S ENGINEER'S, SURVEYOR'S and CONTRACTOR'S POCKET TABLE BOOK	1,50
SCRIBNER'S ENGINEER'S and MECHANIC'S COMPANION	1,50
BUCK ON OBLIQUE BRIDGES. Illustrated with Plans, &c.	4,00
EXAMPLES of RAILWAY MAKING. With PRACTICAL ILLUSTRATIONS.	3,50
SIMM'S on LEVELLING and SETTING OUT RAILWAY CURVES. 8vo	2,25
SIMM'S on MATHEMATICAL INSTRUMENTS, 8vo	2,25
HAUPT on BRIDGE CONSTRUCTION. 8vo.	3,00
QUESTED'S TREATISE on RAILWAY SURVEYING and LEVELLING. 8vo	1,75

Together with an extensive assortment of Books in every department of science.

LAWRENCE SCIENTIFIC SCHOOL, Harvard University.

THE next Term of this Institution will open on the second day of March, 1854, and continue twenty weeks.

Instruction by Recitations, Lectures and Practical Exercises, according to the nature of the Study, will be given in:

Astronomy	by Messrs.	Bond.
Botany	" Prof.	Gray.
Chemistry, analytical and practical	" "	Horsford.
Comparative Anatomy and Physiology	" "	Wyman.
Engineering	" "	Eustis.
Mathematics	" "	Pierce.
Mineralogy	" "	Cooke.
Physics	" "	Lovering.
Zoology and Geology	" "	Agassiz.

For further information concerning the School application may be made to Prof. E. N. Horsford, Dean of the Faculty.

Cambridge, Mass., January 1854.

Railroad Iron.

1250 Tons Erie Pattern Guest and Co's make, weighing 57½ lbs. per yard, to be shipped from Wales in July and August, for this port—for sale by

BOORMAN, JOHNSTON & CO.,
90 Broadway, New York.

June 9, 1853.

Railroad Iron.

THE "Montour Iron Company" is prepared to execute orders for Rails of the usual patterns and weights, and of any required length not exceeding 30 feet per rail. Apply to

THOS. CHAMBERS, President,
68 Beaver st, N. Y.,

September, 1850.

Railroad Iron.

THE Undersigned, Agents for the Manufacturers, are prepared to contract to deliver free on board at shipping ports in England, or at ports of discharge in the United States, Rails of superior quality, and of such weight or pattern as may be required.

VOSE, PERKINS & CO.,
9 South William St.

New York, June 1, 1851.

Railroad Car Works.

THE Undersigned are prepared to manufacture for Railroad Companies, Passenger, Baggage, Cattle, Freight, Gravel and Hand Cars, also Baggage Barrows and Freight Trucks.

F. HUNGERFORD & CO.

Maysville, Ky., Sept. 29, 1853.

Stuart, Serrell & Co.,

CIVIL ENGINEERS,
Rooms 22, 24, 26 & 27,
157 Broadway, New York.

CHARLES B. STUART, DANIEL MARSH, EDWARD W. SERRELL, SAMUEL McELROY.

Railroad Iron.

3000 TONS superior quality, delivery from April forward, with 5 to 600 tons per month, for sale by

NAYLOR & CO.,
99 & 101 John street

12tf

Railroad Iron.

5,000 TONS T RAILS, about one-half weighing 59 lbs. per yard and the remainder 56 lbs. per yard now in bond and for sale by

JOHN H. HICKS,
90 Beaver street.

2d Feb'y.

South-Western Car Shops, Madison, Indiana.

THE subscriber is prepared to execute orders at short notice, for all kinds of Passenger, Freight and other descriptions of Railroad Cars.

Work delivered at any point accessible by railroad, or by the Ohio and Mississippi rivers.

Facilities for transportation, enable the subscriber to afford peculiar advantages to Companies requiring work delivered in the South and West,

W. CLOUGH.

Refer to

JNO. BROUGH, Esq. WINSLOW, LANIER & Co.

feb.18. 1m.

To Railroad Engineers and Contractors.

WANTED, a corps of efficient Engineers and Contractors, for the construction of a Railroad in one of the Southern States. Apply to

DUFF GREEN.

New York, Feb. 14th, 1854.

Ontario, Simcoe & Huron R.R.

CANADA.

THIS road opened in May last to Lake Simcoe is expected to be completed to the Georgian Bay, Lake Huron a distance of 96 miles in June next where it will form the shortest and most agreeable route to the North Western States to Lake Michigan and to the Mineral Regions of Lake Superior.

At present the Passenger Trains leave Toronto for Barrie (64 miles) daily at 8 a.m. and 3. 30 p.m., returning the same day—On the opening of the navigation a Steamer will ply on Lake Simcoe in connexion with the Trains and will convey passengers through that Lake and Lake Conchiching to Orilla whence a short portage of eighteen miles will take them to the waters of Lake Huron to the Steamer (Kaloolah) which runs to the Sault St. Marie and intermediate ports forming the most expeditious and agreeable route to the Mineral Regions of Lakes Huron and Superior.

Arrangements will be made on the completion of the road to the Georgian Bay for a line of first class Steamers to extend their trips to the ports on Lake Michigan.

ALFRED BRUNEL,
Superintendent.

To Locomotive Engine Builders and Engineers.

THE Proprietors offer for rent for a term of years, with immediate possession, the splendid property, known as the BELLEVILLE IRON WORKS, situated on the Mississippi, directly opposite the City of New Orleans, and within 300 feet of the River, with which it is connected by fine wharves and landings.

The buildings are of brick, with slated roofs, and were erected in 1848 at a very heavy expense; are of a most substantial and durable character and admirably fitted for a Foundry and Machine Shops, or almost any mechanical business. They now contain a new and powerful Engine and Boiler and sufficient machinery, say, planing machines—lathes—boring machines, blacksmith's tools, &c., &c., to employ 100 mechanics, and could be put in working order in a few days. The Buildings cover a lot 300 feet square and are amply large to receive the necessary machinery for the use of 800 to 1000 workmen.

The terminus and depot of the New Orleans, Opelousas and Great Western Railroad is situated about 300 yards from the above property, which could be availed of to great advantage for the manufacture of Locomotives and Railroad work, generally as well as Steam Engines, Sugar Mills, and other descriptions of Machinery.

There are no Shops in New Orleans for the manufacture of Railroad Machinery, and as the Railroad Companies now organized in that city contemplate the construction of over 1000 miles of road,—a large part of which is already under contract,—the property now offered for lease offers a most eligible opportunity for parties desiring to contract to furnish the Engines and Machinery,—for those roads. Responsible contractors with their works on the spot would have an advantage over Northern Workshops in contracting for the Work of the Railroads terminating in New Orleans.

The Establishment and prospect of remunerating work to be secured immediately are worthy the attention of manufacturers and Engineers generally.

Applications from responsible parties will be promptly attended to, and to satisfactory parties the proprietors of the Works can offer favorable terms and arrangements.

Letters may be addressed to

R. B. SUMNER,
No. 61 Camp Street,
New Orleans;

and further information may be had by applying to Messrs. BARSTOW & POPE, Pine Street, New York.

Railroad Spikes, Boiler Rivets, etc.

THE Subscribers, Agents for the sale of James S. Spencer's, Jr., Railroad and Boat Spikes, Boiler Rivets, and Wrought Iron Chairs for Railroads, made at his Works near this city, will execute all orders with promptness, despatch, and of the best quality.

ALSO IMPORTERS of English refined and Merchant bar Iron; Extra refined Car and Locomotive Axles (from 3½ to 6½ inches in diameter); B. O. Locomotive Tire (welded by Baldwin). Also, supply Boiler and Flue Iron cut to pattern or otherwise.—Spring, Shear, and Cast Steel, etc., etc., etc.

T. & E. GEORGE.

Philadelphia, November 14, 1850.

Railroad Iron.

THE UNDERSIGNED, HAVING made arrangements abroad, are prepared to contract for the delivery of Foreign rails, of approved brands upon the most favorable terms.

They will also make contracts for American rails, made at their Trenton works, from Andover Iron, in whole or in part, as may be agreed upon.

They are prepared to furnish Telegraph, Spring and Market Wire; Braziers and Wire Rods; Rivets and Merchant Bars to order, all made exclusively from Andover Iron. The attention of parties who require iron of the *very best* quality for special purposes, is respectfully invited.

COOPER & HEWITT,
17 Burling Slip, New York.

February 15, 1850.

Notice to Contractors.

CHIEF ENGINEER'S OFFICE,
Norfolk, Va., Jan. 8, 1854.

SEALED PROPOSALS will be received by the undersigned at this Office, from the 1st until the 20th day of March next, at sundown, for the "clearing" and "Graduation" on the line of the "Norfolk and Petersburg Railroad," between that portion of said road now under contract, and its terminus at Petersburg—covering a distance of about eighteen miles; also, for the "Culvert" and "Bridge" *Masonry* of the last *section* of said work.

At the same time, *sealed proposals* are invited for the "Abutment" *Masonry* of "Bridges" over the Eastern and Southern branches of Elizabeth River.

The work will be divided into *sections* of about three miles, and bids may be made for one or more of said sections.

The line, plan, profiles and quantities of work will be ready for examination on and after the 1st of March.

Specifications with forms of contract and proposal may be had of the undersigned after date.

Payments will be made in *current funds* during the progress of the work, in proportion of *four-fifths* of the amount due.

Of bidders personally unknown to the undersigned, evidence of their responsibility will be necessary; and of those to whom work shall be allotted, will be required bond and approved security in an amount not exceeding *one-fifth* of the amount of their contract, for the timely and faithful execution of the same.

The company reserves the right to accept such proposals as in their judgment will secure the prompt and faithful execution of the work according to contract, or to reject all if none are satisfactory.

The line is easy of access, the country through which it passes abundant in supplies and of a climate highly favorable for the prosecution of work at all seasons.

The work here offered for contract is of a character well worthy the consideration of the most responsible contractors.

W. MAHONE,
Chief Engineer.

January 19.

—

Norfolk, Feb'y 10th, 1854.

Sealed proposals will be received between the dates mentioned in the above notice, for the construction of two Iron Bridges with stone abutments and piers, one over the Eastern Branch of the Elizabeth River, 630 feet long, and containing about 3,300 cubic yards of masonry, and the other over the Southern Branch of the same stream, about 400 feet long, and containing some 1,700 cubic yards of masonry. Plans of bridges, with quantities of material and working drawings, will be ready for inspection after the 1st March.

From this date proposals will be entertained for the Clearing and graduation of several sections not included in the 18 miles mentioned in the above notice, and also for the bridges and culvert masonry upon said sections,—of the former about 3,560 cubic yards, and the latter 670.

W. MAHONE,
Chief Engineer N. & V. R.R.

Spikes, Spikes, Spikes.

ANY person wishing a simple and effective Spike Machine, or a number of them, may be supplied by addressing J. W. FLACK, Troy, N. Y.

or, MOORE HARDAWAY, Richmond, Va.

March 6. 1850.

Railroad Iron.

THE Subscribers are at all times prepared to enter into contracts for Railroad Iron, of Messrs. Guest & Co., or other leading manufacturers' make, delivered free on board vessels in England or in this country.

BOORMAN, JOHNSTON & CO.,
90 Broadway, New York.

Sept. 7.